Central Vista project essential, of public importance: Delhi HC

- The Supreme Court, in a majority judgment, gave its go-ahead to the multi-crore Central Vista redevelopment project, which proposes to build a new Parliament three times bigger than the existing 93-year-old heritage building and modify the use of 86.1 acres of land, home to India's power corridor in the national capital.
- In their majority opinion, Justices A.M. Khanwilkar and Dinesh Maheshwari said the court cannot order the government to desist from spending money on one project and use it for something else.
- They said the government did not act against public trust.
- They brushed aside allegations that the government committed foul play and illegally carved out the Parliament project from the Central Vista project.
- The majority opinion said the project did not involve any “radical” change in land use. The proposed change in landscape would not limit “recreational spaces” for the public.
It dismissed notions that the project was “sui generis” (unique) and deserved a “heightened judicial review”.

“The right to development is a basic human right and no organ of the state is expected to become an impediment in the process of development as long as the government proceeds in accordance with law,” Justice Khanwilkar wrote.

Justice Sanjeev Khanna, in a separate dissent, upheld the project bid notice, award of consultancy and the order of the Delhi Urban Arts Commission, but concluded that the Centre did not take the public into confidence about the changes proposed for Central Vista, an area, which in post-Independent India, “inspires and connects common people to the citadels of our democracy”.

About Central Vista Project

- The Union Ministry of Housing and Urban Affairs proposed a Central Vista redevelopment project in 2019.

The project has the following features

- Constructing a triangular Parliament building next to the existing one.
- Constructing Common Central Secretariat.
- Revamping of the 3-km-long Rajpath — from Rashtrapati Bhavan to India Gate.
Why is the need of revamping Central Vista?

- The Parliament building’s facilities and infrastructure are inadequate to meet the current demand.
- The offices of the Central Government are spread over different locations which affects inter-departmental coordination, and unnecessary travel leading to congestion and pollution.
- Most of the existing buildings have outlived their structural lives.

History of Central Vista: PT Pointers

- Currently, the Central Vista of New Delhi houses Rashtrapati Bhawan, Parliament House, North and South Block, India Gate, National Archives among others.
- In December, 1911, King George V made an announcement in Delhi Durbar (a grand assembly) to shift the capital of India from Calcutta to Delhi.
- Delhi Durbar was hosted to mark the coronation of King George V.
- The task of constructing a new city was given to Edwin Lutyens, known for his strong adherence to European Classicism and Herbert Baker, a prominent architect in South Africa.
- Herbert Baker is also the architect of the Union buildings at Pretoria, South Africa.
- Parliament House building was designed by both Lutyens and Baker.
- Rashtrapati Bhawan was designed by Edwin Lutyens.
- The Secretariat which includes both north and south block was designed by Herbert Baker.

For analysis of Central Vista Project: Click here

Arun Kumar Mishra likely to be the new NHRC Chairperson

- Former Supreme Court Justice Arun Kumar Mishra is likely to be the new NHRC Chairperson.
Chairperson of the National Human Rights Commission (NHRC) after a high-powered recommendation committee proposed his name.

- Former Chief Justice of the Jammu and Kashmir High Court, Mahesh Mittal Kumar, and former Director of the Intelligence Bureau, Rajiv Jain, had also been recommended by the high-powered panel as members of the NHRC, but the official notification is yet to be out until the filing of this report.
- The selection panel consisted of
  1. Prime Minister Narendra Modi;
  2. Home Minister Amit Shah;
  3. Deputy Chairman of the Rajya Sabha, Harivansh;
  4. Lok Sabha Speaker Om Birla; and the
  5. Leader of the Opposition in the Rajya Sabha, Mallikarjun Kharge.

For over five months now, the NHRC has been without a full-time head after Justice H.L. Dattu retired last December.

- A highly-placed source said while 12 names were shortlisted for the two vacancies, the shortlisted candidates for the position of Chairperson included three former Chief Justices of India (CJIs).

### NHRC and SHRC, 1993

- Both are **Statutory Autonomous** bodies established under **Protection of Human Rights Act, 1993**.
- It is the **watchdog of Human Rights** in India. They are Rights w.r.t. **Life, Liberty, Equality & dignity** guaranteed by Constitution or of International Covenants. Accordingly 25 States have constituted SHRCs through official Gazette Notifications.

#### NHRC

1. **Composition** of NHRC: Chairman, 4 members and 4 Ex-officio members.
2. **Qualifications** for NHRC:
   1. Chairperson should be a **Retd. CJI** and
   2. Members should be Serving or Retired Judge of SC, a Serving or Retd CJHC and 2 persons having practical experience of Human Rights.

#### SHRC

1. **Composition** of SHRC: Chairperson & 2 members.
2. **Qualifications** for SHRC:
   1. Chairperson should be a **Retd. CJHC** and
   2. Members should be serving or Retd. Judge of HC or Dist Judge in the State for > 7 years’ experience and having knowledge or practical experience of human rights.
3. 4 Ex-officio members are Chairman of National Commission of Minorities, SCs, STs, Women.

3. Appointment: by Prez on the recommendations of a 6 member Committee: PM as its head, Speaker of Lok Sabha, Deputy Chairman of Rajya Sabha, Leader of Opposition in both Houses of Parliament and Home Minister.

4. Further, a sitting Judge of SC or a sitting Chief Justice of HC can be appointed only after consultation of CJII.

3. Appointment by Gov (but removal by Prez) on the recommend of a Committee consisting of CM as its head, Speaker of Legislative Assembly, State Home Minister and Leader of Opposition of Legislative Assembly. If State has LC, then the committee also has Chairman of LC and Leader of Opposition of LC. Further, a sitting JoHC or a sitting Dist Judge can be appointed only after consultation of CJHC of the State concerned.

- **Tenure (of both NHRC & SHRC):** 5 years or 70 years whichever is earlier. **Not eligible for further Employment** under Center or States.

- **Removal (of both NHRC & SHRC) by Prez:** (Same as of UPSC, CVC, CIC) Removal is done only by Prez under the following conditions:
  1. If he has gone bankrupt or if, according to Prez, he is of **unsound mind** or if he is involved in **paid employment outside the duties of office**.
  2. Prez can also remove her in case of **Misbehavior or incapacity** (defined in Constitution), Prez refers this matter to SC. **SC's decision is binding on Prez.** Then he may remove. During the course of enquiry by the SC, Prez can suspend them.

- The salary, allowances & service conditions are determined by C / S govt & can't be varied to his disadvantage post appointment.

- **Functions of Both:**
  1. To strengthen the institutional arrangements through which human rights could be addressed in their entirety and in a more focused manner.
  2. To inquire into any violation of Human Rights, **either suo motu or on a petition** presented to it or an order of a Court. **SHRC can only enquire into matters related w State List or Concurrent List** of the 7th Schedule of the Constitution. However if any such cases is enquired by NHRC or any other Statutory Commission, then SHRC doesn't inquire into that case.
  3. To intervene in any proceeding involving allegation of violation of Human Rights.
4. To visit jails or detention places, study the living conditions of inmates and make recommendations.
5. To review the Constitution and legal safeguards for the protection of HRs and make recommendations.
6. To review the factors including acts of terrorism that inhibit the enjoyment of rights and recommend remedial measures.
7. To spread human rights literacy and encourage the efforts of NGOs working in this direction.
8. To study treaties and international agreements on Human Rights and make recommendations.
9. To undertake and promote research in the field of Human Rights.
10. To undertake such other functions as it may consider necessary for the promotion of human rights.

**Working:**

1. **It can’t by itself punish the guilty.** That is the responsibility of courts. It makes independent and credible enquiry into any case of violation of human rights. Also if any govt officer neglects.
2. It regulates its own procedure. It has all the powers of a Civil Court and its proceedings have a judicial character. It may call for info or reporty from C & S govts or any subordinate authority.
3. The NHRC has its own nucleus of working staff for investigation. Besides, it is empowered to utilize the services of any officer or investigating agency of C or S govt. It has also established effective coop with NGOs with 1st hand info about HR violations.
4. It can only look into the matter of violation within 1 year of its occurrence and not after that.
5. After enquiry, It may recommend the concerned government or authority
   1. To make payment of compensation or damages to the victim.
   2. The initiation of proceedings or any other action against the guilty public servant.
   3. For the grant of immediate interim relief to the victim.
6. It may approach the SC or HC concerned for the necessary directions, orders and writs.
7. It can summon witnesses, question any govt official, demand any official paper, visit any prison for inspection or send it's own team for on the spot inquiry.

**Criticisms:**

1. It has no power to punish the violators of Human Rights nor can it provide any relief to the victim.
2. The functions are mainly recommendatory in nature. Not binding. But it should be informed about the action taken on its recommendations.
within 1 month.
3. The Commission has a limited role, powers and jurisdiction wrt violation of human rights by the member of Armed forces. In this sphere NHRC may seek a report from Govt and make recommendations. Center has to inform on actions taken within 3 months.
4. Yet the govt considers cases forwarded by it. It is therefore improper to say that the Commission is powerless. It enjoys great material authority and no govt can ignore its recommendations.
5. NHRC submits its annual report to Central govt and State govt concerned. SHRC submits to State govt.

- **Protection of Human Rights Act, 1993 also provides for the establishment of Human Rights Courts:**
  1. Acc to the act, HRC can be est in every district for speedy trial of violation of Human Rights.
  2. These Courts can be set up by the State govt only w the concurrence of concerned CJHC.
  3. For every HRC, State govt specifies a public prosecutor or appoints an advocate (practice > 7 years) as a special public prosecutor.

- **Protection of Human Rights (Amendment) Act, 2006**
  1. NHRC can undertake visits to jails even without intimation to State Govt.
  2. Chariman and members of NHRC resign to Prez, and SHRC resign to Guv.
  3. NHRC can transfer complaints received by it to SHRCs.

Source: TH

5 trapped in Meghalaya coal mine after dynamite blast

A dynamite blast led to the flooding of a coal mine in East Jaintia Hills district in Meghalaya, trapping five labourers.

Illegal Mining in Meghalaya
According to available government data, Meghalaya has a total coal reserve of 640 million tonnes, most of which is mined unscientifically by individuals and communities.

In 2011–12, rat-hole mines produced about 10 million tonnes of coal. This large coal production in a small state had a devastating impact on the environment.

Some of the areas of Coal mining in Meghalaya are

- Ksan in Meghalaya’s East Jaintia Hills

What is a rat hole mine?

[Map of Coalfield and Checkgate in Meghalaya]

What is a rat hole mine?
A rat-hole mine comprises a deep vertical shaft with narrow horizontal tunnels, two to four feet in dimension, dug on its sides. Miners (mostly child labors) go into these horizontal tunnels for hundreds of feet to take out coal. Primitive tools are used to build and operate these mines.

Meghalaya coal
The Jaintial Hills district of Meghalaya is a major coal producing area having an estimated coal reserve of about 40 million tonnes. Meghalaya coal contains low ash, high volatile matter, high calorific value and comparatively high sulphur content. The coal is mostly sub-bituminous in character.

No policy
Unlike the rest of the country, local communities in Meghalaya own the hills and possess rights over its minerals to a large extent, as it is a tribal state under the Sixth Schedule of the Constitution. So, the state government has little control to check illegal and unscientific mining. The state is yet to have a safe mining policy despite an instruction by National Green Tribunal in 2014.

Environmental impact
Entire coal mining area of Jaintia Hills is full of mine pits and caves. These open, unfilled pits are the places where surface water percolates and disappears. This leads to pollution in the rivers, air pollution due to destruction of vegetation and severe impact on agriculture land.

- A rat-hole mine comprises a **deep vertical shaft with narrow horizontal tunnels**, two to four feet in dimension, dug on its sides.
- Miners (mostly child labors) go into these horizontal tunnels for hundreds of feet to take out coal. Primitive tools are used to build and operate these mines.
mines and accidents are common and most are not reported.

- Rat hole mining involves digging of very small tunnels, usually only 3-4 feet high, which workers (often children) enter and extract coal.
- The National Green Tribunal (NGT) banned it in 2014, on grounds of it being unscientific and unsafe for workers. The state (Meghalayan) government has challenged the NGT ban in the Supreme Court.
- Despite a ban, rat-hole mining remains a prevalent practice for coal mining in Meghalaya, where a mine has recently collapsed.
- Since the coal seam is extremely thin in Meghalaya, no other method would be economically viable. Removal of rocks from the hilly terrain and putting up pillars inside the mine to prevent collapse would be costlier. In Meghalaya this is the locally developed technique and the most commonly used one.

**Government policy?**
The government does not have a policy in place to regulate mining and the new mining policy drafted in 2012 has not yet been implemented. Moreover, the NGT found the 2012 policy inadequate as it does not address rat-hole mining.

Impact of Meghalaya coal mining

- Meghalaya coal has high sulphur content, leading to discharge of sulphuric acid from these mines. The acid discharge in some areas is so severe that they have made the rivers acidic, affecting aquatic life and corroding machinery at hydroelectric projects and dams.
- The water also has high concentration of sulphates, iron and toxic heavy metals, low dissolved oxygen (DO) and high BOD, showing its degraded quality.
- The roadside dumping of coal is a major source of air, water and soil pollution.
- None of the rat-hole mines had leases; they simply didn’t exist on paper. All of them were operating without any environment clearance from the environment ministry or from the pollution control board. These illegalities were enabled by the so-called legal ambiguity regarding mining in Sixth Schedule areas as mentioned in the Constitution.
- As Meghalaya is a Sixth Schedule state, and the power to make laws with respect to land belongs to the Autonomous District Councils, landowners can mine without any permission from the state or the Union governments. To bolster the argument, it was alluded that the coal mines in Meghalaya were never nationalised.
- However, it was found that the coal mines of Khasi and Jaintia were nationalised under the Coal Mines (Nationalisation) Act, 1973.
- It is also found that paragraph 9 of the Sixth Schedule clearly stipulates the need for “Licences or leases for the purpose of prospecting for, or extraction of, minerals”.
- In addition, it is legally established that all central mining and environmental laws are applicable to the coal mines in Meghalaya.
- On a case filed by the All Dimasa Students’ Union that highlighted the unregulated coal mining in the Jaintia Hills, the National Green Tribunal (NGT) banned them in April 2014. But reports now indicate that in the guise of transporting already-mined coal, illegal mining was happening all along in collusion with the local and the state government.
- The political class supports these mines. The state government has challenged the ban in the Supreme Court and the state assembly in 2015.
adopted a resolution urging the Centre to exempt Meghalaya from central laws so that rat-hole mining can continue.
- But such mines are environmentally damaging and unsafe to be allowed, and hence must be banned. The bottom line is the right to self-governance does not translate into the right to destroy the environment, even in the Sixth Schedule areas.
- Off road movement of trucks and other vehicles in the area for coal transportation also adds to the ecological and environmental damage of the area.
- The practice has been declared as unsafe for workers by the NGT.
- The mines branch into networks of horizontal channels, which are at constant risk of caving in or flooding.

Source: TH

Two Child Policy of China failed! China to allow a third child!
GS-II | 01 June, 2021

Two Child Policy of China failed! China to allow a third child!

- China will for the first time allow couples to have a third child, in a further relaxation of family planning rules five years after a “two-child policy” largely failed to boost birth rates.
- The announcement followed a meeting of the 25-member Politburo, chaired by China’s President and Communist Party of China General Secretary Xi Jinping, “to hear reports on major policy measures to actively address the ageing of population during the 14th Five-Year Plan period (2021-2025).
- The change comes less than three weeks after the release of China’s once-in-a-decade population census that painted an alarming picture of declining births. The National Bureau of Statistics said on May 11 that 12 million babies were born last year, the lowest number since 1961, a time when Mao’s China was in the midst of a four-year famine, and down from 17.86 million in 2016.
- The census said China’s population was 1.41 billion in 2020, an increase of
72 million since the last census in 2010, reflecting a 5.38% growth in this period and a 0.53% annual growth.

- Forecasts say the population could peak in the next couple of years and most likely by 2025, when India will become the world’s most populous country.

Demographics of China

- The census recorded 264 million in the age group of 60 and over, up 5.44% since 2010 and accounting for 18.70% of the population.
- Those in the 15-59 age group were 894 million persons, down by 6.79% since 2010 and accounting for 63.35% of the population.
- China’s workforce in the 15-59 age bracket peaked at 925 million in 2011, according to the Ministry of Human Resources and Social Security said previously.
- That number was down to 894 million in this census and would drop to 700 million by 2050.

- China introduced a “two child policy” in 2016, but the wide consensus is that it failed to have the desired impact.
- Surveys carried out by Chinese media attributed financial pressures as one main reason.
- A 2015 survey by the government said 70% of respondents attributed financial reasons for choosing to not have many children.

Source: TH

IIT Ropar developed AmbiTag

IIT Ropar developed AmbiTag

- Indian Institute of Technology, Ropar (IIT Ropar) in Punjab has developed a first-of-its-kind IoT device – AmbiTag that records real-time ambient
temperature during the transportation of perishable products, vaccines and even body organs and blood.

- That recorded temperature further helps to know whether that particular item transported from anywhere in the world is still usable or perished because of temperature variation.
- This information is particularly critical for vaccines including Covid-19 vaccine, organs and blood transportation.

Shaped as USB device, AmbiTag continuously records the temperature of its immediate surroundings “from -40 to +80 degrees in any time zone for a full 90 days on a single charge.

- Most of the similar devices available in the international market record data only for duration of 30-60 days.
- It generates an alert when the temperature goes beyond a pre-set limit. The recorded data can be retrieved by connecting the USB with any computer.
- The device has been developed under Technology Innovation Hub – AWaDH (Agriculture and Water Technology Development Hub) and its Startup ScratchNest.

AWaDH is a Govt of India project. Prof. Kumar said that the device is certified with ISO 13485:2016, EN 12830:2018, CE & ROHS.

- Besides perishable items including vegetables, meat and dairy products it can also monitor the temperature of animal semen during transit.
- So far, such devices are being imported by India in a massive quantity from other countries such as Singapore, Hong Kong, Ireland, and China.

Source: PIB

Horticulture Cluster Development Programme (CDP)
GS-III | 01 June, 2021

Horticulture Cluster Development Programme (CDP)

- In a pilot phase, the programme will be implemented in 12 horticulture clusters out of the total 53 clusters selected for the programme.
- A central sector programme implemented by the National Horticulture Board (NHB) of the Ministry of Agriculture and Farmers’ Welfare, CDP aims at growing and developing identified horticulture clusters to make them globally competitive.
The programme will address all major issues related to the Indian horticulture sector including pre-production, production, post-harvest management, logistics, marketing and branding.

The programme is designed to leverage geographical specialisation and promote integrated and market-led development of horticulture clusters.

Ministry of Agriculture and Farmers' Welfare (MoA&FW) has identified 53 horticulture clusters, of which 12 have been selected for the pilot launch of the programme.

CDP will benefit about 10 lakh farmers and related stakeholders of the value chain.

With this programme, we aim to improve exports of the targeted crops by approx. 20% and create cluster-specific brands to enhance the competitiveness of cluster crops.

The clusters of the pilot phase include Shopian (J&K) and Kinnaur (H.P.) for Apple, Lucknow (U.P.), Kutch (Gujarat) and Mahbubnagar (Telangana) for Mango, Anantpur (A.P.) and Theni (T.N.) for Banana, Nasik (Maharashtra) for Grapes, Siphahijala (Tripura) for Pineapple, Solapur (Maharashtra) and Chitradurga (Karnataka) for Pomegranate and West Jaintia Hills (Meghalaya) for Turmeric.

These clusters will be implemented through Cluster Development Agencies (CDAs) which are appointed on the recommendations of the respective State/UT Government.

The programme is expected to converge with other initiatives of the Government such as the Agriculture Infrastructure Fund which is a medium - long term financing facility for investment in projects for post-harvest management infrastructure and community farming assets and will leverage the central sector scheme of the Ministry for Formation and Promotion of 10,000 Farmers Producer Organisations (FPOs).

Source: PIB
Monsoon in India

South West Monsoon in India (Jun, July, Aug, Sep):

- **Definition**: It is the seasonal reversal in the wind direction. It is experienced in tropical areas (20°N to 20°S). In India, it is experienced in June, July, August and September.

5 Key players in Monsoon:

1) **Differential heating and cooling of land** (LP) and Sea (HP) in summer.

2) Northward shifting of ITCZ in July over Ganga plains.
• ITCZ is a low pressure zone located at the equator where trade winds converge.
• This leads to the formation of thermal low over North and Northwest India.
• Southeast Trade winds from S hemisphere cross the Equator (40°E to 60°E of longitude) and turn right due to Coriolis force in the SW direction.
• It is also called as Monsoon trough during monsoon year.
• The location and shift of ITCZ governs the breaks and pulsating nature of Monsoons.

3) The presence of High Pressure (HP) area over Madagascar (20°S of Indian Ocean). The intensity and position of this HP area affects Indian monsoon.

4) Tibetan plateau gets intensely heated
This results in strong vertical air currents and the formation of High Pressure over the plateau @ about 9 km above sea surface.

This is **Tropical Easterly Jetstream** which is associated closely with the burst of monsoon.

**Tropical Easterly Jetstream is also a major reason why there are no cyclones during Monsoon because the presence of an Easterly jet over the Indian landmass** in the upper troposphere prevents vertical circulation of air...which is a pre-condition for formation of cyclones.

5) Northward shifting of Sub Tropical Westerly Jet Stream (STWJ) over North of Himalayas:

**Jet Stream Theory: Origin of Monsoon**

(Reason for the sudden burst of Monsoon)

- STWJ is a band of fast moving air from **West to East** usually found in mid-latitudes in the upper troposphere @ the height of 8-15km
- During Winter, STWJ shifts Southwards. It gets bifurcated coz of Himalayas and 1 branch blows South of Himalayas. There is a presence of HP belt over the Northwest India and Low Pressure
over Indian Ocean.

- Presence of STWJ south of Himalayas also induces HP belt in the upper troposphere. Consequently wind direction is from SE to NW.
- During summer, sun is in Northern Hemisphere, Northwest India is intensely heated. Therefore, LP belt is created over the surface of Northwest India.
- Indian Ocean is comparatively cooler and has a HP belt. Ideally, wind should blow from sea to land but there is still presence of STWJ to the South of Himalayas.
- HP belt over the upper troposphere prevents the upward movement of air from the surface LP and thus, the monsoon is not yet activated.
- By the start of June STWJ is moved to N of Himalayas and thus upper tropospheric HP is removed. This induces a rapid movement of wind from sea towards land, giving the sudden "burst" or "break" of monsoon.

6) The presence of Tropical Easterly Jetstream over peninsula in summer. It is associated closely with the burst of Monsoon.

- **Role of Tibetan Plateau**: It is the highest & largest plateau of the world with avg height of 4000 m and is surrounded by even higher mountain ranges.
- **In summer, Tibetan Plateau acts as a heat source**. Air above it is heated & is warmer compared to the surrounding air of mountain ranges. Warm air rises above and creates HP belt in the upper air above Tibetan plateau. Air spreads from HP belt and sinks over Indian Ocean around 30°S and 70°E.
- **This movement from Tibet to IO is known as Tropical Easterly Jet (TEJ)**. This jet drives monsoonal winds towards Indian subcontinent and intensifies SW monsoon.
- The area over IO where TEJ sinks is known as **Mascarene High**.
- **It is a major reason why there are no cyclones over the Indian landmass. It is present in the Upper troposphere & prevents d vertical circulation of air which is a pre-condition for formation of cyclone.**

7) S-E trade winds from Southern hemisphere cross the equator and turn right due to coriolis force.

**El Nino/La Nina and the Indian Monsoon**
El-Nino is a complex weather system that appears once every 3-7 years, bringing drought, floods and other weather extremes to different parts of the world.
The system involves oceanic and atmospheric phenomena with the appearance of warm currents off the coast of Peru in the Eastern Pacific and affects weather in many places including India.

El-Nino is merely an extension of the warm equatorial current which gets replaced temporarily by cold Peruvian current or Humbolt current (locate these currents in your atlas).

This current increases the temperature of water on the Peruvian coast by 10°C. This results in:

1. the distortion of equatorial atmospheric circulation;
2. irregularities in the evaporation of sea water;
3. reduction in the amount of planktons which further reduces the number of fish in the sea.

The word El-Nino means ‘Child Christ' because this current appears around Christmas in December. December is a summer month in Peru (Southern Hemisphere). El-Nino is used in India for forecasting long range monsoon rainfall. In 1990-91, there was a wild El-Nino event and the onset of southwest monsoon was delayed over most parts of the country ranging from five to twelve days.

Retreating Southwest (SW) Monsoon Season (Oct, Nov): Retreat of Monsoon and onset of the NE Monsoon:
Unlike sudden burst of SW monsoon, retreat is gradual. It starts retreating from North India by the 2nd week of Sep. By the end of Sep, SW monsoon becomes weak as the LP trough (ITCZ) of Ganga plain starts moving southwards in response to southwards in response march of the Sun.

The monsoon retreats from the Western Rajasthan by the 1st week of Sep. It withdraws from Rajasthan, Gujarat, Western Ganga plains and Central Highlands by the end of month.

By beginning of Oct, LP covers Northern Bay of Bengal and by early Nov, it moves over KN and TN. By mid Dec the ITCZ is completely removed from the Peninsula.

It is marked by clear skies and rise in temp. The land is still moist. Owing to the conditions of HT and humidity, the weather becomes rather oppressive. This is commonly known as ‘October Heat’. In the 2nd ½ f Oct, temp ? esp in NI.

Tropical depressions or Bay Cyclones in late monsoons:

Why is the retreating monsoon season dry in North India and rain in the Coromandal Coast in Oct & Nov?

It is associated w the passage of cyclonic depressions which
originated over the Andaman Sea and manage to cross the Eastern coast of the S peninsula. These tropical cyclones are very destructive.
- The thickly populated deltas of Godavari, Kaveri, and Krishna are their preferred targets. Every year, a cyclone brings disaster here.
- A few cyclonic storms also strike the coast of WB, Bangladesh, and Myanmar. Such cyclones are less frequent in the Arabian Sea. Why?

**Why do the cyclones in the Arabian Sea not affect India?**
- Tropical cyclones move from east to west...they are secondary circulations and maintain the larger direction of the planetary winds (i.e. Trade winds which blow from East to West).
- So, any cyclones to form in the Arabian Sea are less likely to affect India.
- Also, another reason that can be given is that the Findlater jet of the coast of Somalia causes coastal upwelling and hence cooling of waters in the western Indian Ocean and cooler temperatures would not support the formation of tropical cyclones.
- However, please note that it would happen only if the Findlater Jet is very strong.

**What is the difference between Retreating Southwest Monsoon and Northeast Monsoon?**

![Monsoon Maps](image)
# Mechanism of Monsoon

It can be understood in 4 different points:

1) **Onset and Landward advance of Monsoon from Kerala:**

- Differential heating of land (LP) and sea (HP) in summer.
- Northward shift of ITCZ.
- Northward shifting of STWJ.
- Heating of Tibetan plateau and inducement of TEJ.

2) **Rain bearing systems:**

- Monsoon rainfall enters in India thr’ 2 branches, Arabian Sea branch of SW Monsoon brings rain to W coast and further interiors of Peninsula (It is related to offshore meteorological conditions along eastern coast of Africa) and BoB Bengal branch gives rainfall over Eastern, NE and NI. Tropical depressions originating in BoB cause rainfall in Northern plains.
- **Arabian Sea Branch of SW Monsoon**: The total volume is 3 times more than BoB branch. It approaches Southwest coast of India by the 1st week of June. They further split into 3 branches:

1. **Western Ghats (WG):**

## Table: Retreating South West Monsoon vs Northeast Monsoon

<table>
<thead>
<tr>
<th>Retreating South West Monsoon</th>
<th>Northeast Monsoon</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Blow in Oct, Nov</td>
<td>• Dec, Jan, Feb</td>
</tr>
<tr>
<td>• Season of transition between hot, rain season and cold, dry season.</td>
<td>• Cold Weather Season.</td>
</tr>
<tr>
<td>• Characterised by oppressive heat and humidity called ‘October Heat’.</td>
<td>• This is very pleasant season with low temperature, low humidity and clear skies.</td>
</tr>
<tr>
<td>• They blow from SW direction but are not strong enough to blow right into Northern plain.</td>
<td>• These winds blow from NE direction from land to sea.</td>
</tr>
<tr>
<td>• They withdraw in stages which result in decreasing rain.</td>
<td>• They do not give rain to any part of India except TN coast.</td>
</tr>
</tbody>
</table>
The high WG leads the moist air to rise quite high. Heavy rain (200-250 cms) falls on the windward slopes of WG. The leeward side receives only 60 cm rainfall & rain shadow areas receive much less. The winds progressively deposit less rainfall from W to E. Ex. Mumbai-200 cm & Chennai-40 cm and from S to N. Ex. Thiruvan-puram-325 cm, GA-300 cm & Mumbai-200 cm. The intensity of rainfall over the west coast of India is related to 2 factors: The offshore meteorological conditions and the position of equatorial jet stream along the eastern coast of Africa.

2. **North of Mumbai**: After crossing the Ghats the monsoon winds cross the plateau & reach MP, JH and OD giving rainfall. Part of this wind enters through Narmada valley & causes good rainfall in the Chota Nagpur plateau. Further North, a part of these winds passes over West and Southeast Rajasthan without depositing much rainfall and goes straight to the sub-Himalayan region giving rainfall to the foothills of the W Himalayas, eastern PN, HR and NE RJ where it meets the BoB branch.

3. **Saurashtra Peninsula and Kachch**: Aravallis runs almost parallel to the direction of this branch and do not form a barrier to intercept the winds, and hence do not receive much rainfall from this branch.

**Bay of Bengal branch of SW Monsoon:**

1. These winds pass over Ganga and Brahmaputra delta strike against Shiwalik ranges, Himalayas, Chittagong and Assam hills, then tise and cause heavy rainfall in WB, SK, AR and southern slopes of Khasi-Jaintia hills. Cherrapunji (1250 cm) receives the highest rainfall in the World.
2. 1 branch of BoB branch is deflected in Western direction, blowing from SE, between Himalayas and Peninsula. The winds move up in the Indo gangetic plain parallel to Himalayas.
3. The rainfall decreases up to Kashmir from Ganga plains (250 cm). A small amount of ppt is received on the E Aravalli slopes as they form a barrier, but Thar on the West side lies in the rain shadow for the SW monsoon BoB branch and receives little or no rainfall.
4. During monsoon, strong winds and wet spells last for a few days followed by a period of weak winds or monsoon lull. This leads to dry spells between two wet spells.
5. The normal duration of monsoon in most parts of India is 100 days to 120 days but in RJ it is 45-50 days, while it is max of 6 months in Kerala. Temp are < in d wet season due to cloudiness & rainfall.
Why Tamil Nadu dry during this season?

- TN coast is parallel to BoB branch of SW monsoon.
- It lies in the rain shadow region of Arabian Sea branch of SW Monsoon.

3) Break in the Monsoon:

- **During SW monsoon**, if rain fails to occur for 1 or more weeks, it is known as break in the monsoon. These breaks are quite common during rainy season. The **location and shift of ITCZ governs the breaks and pulsating nature of Monsoons**. These breaks in diff regions are due to different reasons:
  1. In NI, rains are likely to fail if the rain-bearing storms are not very frequent along monsoon trough or the ITCZ over this region.
  2. Over the W coast, the dry spells are associated with the days when winds blow parallel to the coast.
  3. Dry spells occur over Western RJ due to thermal conditions in the lower atmosphere, such as Inversion of temp.
  4. Cyclonic originating head of BoB and their crossing into the mainland may result in BoB branch of SW monsoon winds getting drawn into cyclonic depression resulting in dry spells in SE parts of Ganga plains.

- **Position of ITCZ over Northern plain**, called as monsoon trough determines tracks of tropical depressions. As the axis of monsoon trough oscillates, the tracks of these depressions also vary. This cause wide fluctuation in the direction and path these depressions take intensity of rainfall a.w.a variations in the amount of rainfall from year to year. If the trough lies close to Himalayas. It causes heavy rainfall in the foothills which results in widespread floods and prolonged dry spells in the plains. If the LP trough lies over Ganga plain, it results in heavy rains in the plains and dry spells in the foothills

4) Retreat of Monsoon and onset of the NE Monsoon.

Completed above.

What are the characteristics of Monsoonal Rainfall?
Rainfalls received from southwest monsoon is seasonal in character. June - Sep. 
Governed by Relief or Topography.
Monsoon rainfall decreases from the increasing distance from the sea.
Monsoon rains occur in wet spells of few days. Then Breaks related to cyclonic disturbances over BoB and their crossing into mainland.
Heavy downpour leads to runoff and soil erosion.
75% of the total rain received during SW monsoon. Agri dependent on it.
Uneven spatial distribution.
Rain sometimes end considerably earlier than usual causing great damage to standing crops and making the sowing of winter crops difficult.

Source: NCERT and Aspire IAS Notes

BRICS Virtual Meet
GS-II | 02 June 2021

BRICS

ASPIRE IAS

17/10, Beside Aggarwal Sweets, Old Rajinder Nagar, New Delhi 110060
www.aspireias.com
Follow us on Facebook, Instagram, Twitter
010068998, 8287714422

"The Name Associated with Excellence"
BRIC was formed in 2006. South Africa joined in 2012. It is an informal organization with no charter. All coming as a part of changing world order, South South cooperation, multilateralism, increased accommodation in global, attracting investment & stab eco system. It was formed in the context China and India, by 2050, become the world's dominant suppliers of manufactured goods and services. The term BRIC was coined by Goldman Sachs Economists like Jim O’Neill. O’Neill’s paper was named “Building Better Economic BRICS”. It comprises 42% of the world's population, has 23% of the global GDP but just 17% of the world trade. BRICS represents the World’s top emerging economies and claims to serve as a bridge between the developed and developing World. Objectives: More sustainable, equitable and mutually beneficial development.

There 4 main Areas of cooperation = 

- **Economic cooperation**: in Innovation, Customs and Strategic coop between BRICS Business Council. Contingent Reserve Agreement and NDB.
- **People to People Exchange**: in culture, sports, education, film and youth. Eg. Young Diplomats Forum; Parliamentarian Forum, Civil BRICS etc.
- **Political and Security Cooperation**: aimed at achieving peace, security, development and cooperation. BRICS is used as a driver for African Agenda and South-South cooperation.
- **Cooperation Mechanism**
  1. Track I (Government to Government);
  2. Track II (Government affiliated institutions) and
  3. Track III (People to people).
- **Chairperson**: The Chair country goes by the name B, R, I, C, S in that order. 2019 – Brazil was the Chair. 2020 – Russia. In 2021 India will host 13th BRICS Summit and India is a Chair in 2021.

**BRICS Summits**

- **2017 Summit in Xiamen, China**
  1. China introduced BRICS + by inviting a few countries from different regions like Argentine, Jamaica, Turkey, Indonesia and Egypt.
- **2018 Summit in Johannesburg, South Africa**: 
  1. Theme was BRICS in Africa: Collaboration for inclusive growth and shared prosperity in the IR 4.0.
  2. BRICS Outreach programme was with African leaders and Outreach
with Global South summit.
3. It also calls for Comprehensive Convention on International Terrorism (CCIT) by UNGA.
4. Discussed on democratisation of UN, expansion of UNSC.
5. Leaders stressed on the centrality of the rules based transparent, non discriminatory, open and inclusive multilateral trading based on WTO.
6. Help nations prepare for IR 4.0 BRICS PartNIR (Partnership on New Industrial Revolution). It should engage Private sector and Young innovators.

• **2019 11th Summit Brasilia**: Brasilia is the 1st city to hold its 2nd BRICS summit
  1. Brazil is the current Chair of BRICS. President is Jair Bolso
  2. BRICS Bond Fund in local currecy is on the financial agenda of Brasilia meet.
  3. Russia (like BRICS) rejects diktat and pressure, blackmail and threats, let alone the use of force without UNSC's decision.
  4. BRICS is committed to democratization of International life and it's development under the principles given in UN charter, the principles of respect for cultural and civilizational diversity of world and the right of people to forge their destiny themselves.
  5. BRICS is also becoming a magnet for major Emerging economies. Coz BRICS protects multilateralism, supports transparent, non discriminatory, open, free and inclusive International Trade and rejects unilateral economic restrictions in developing International economic ties.
  6. BRICS CRA = $ 100 bn to be a guaranter of thr BRICS financial stability in case of crisis.

• **G20 Osaka Summit, Japan (2019)**
  1. BRICS in G20 Osaka summit indicated to protect multilateral trade system, role of WTO & IMF reforms.
  2. It talks about Regional Groupings like: RIC (Russia-India-China); JIU (Japan-India-USA) and BRICS (Brazil-Russia-India-China-South Africa). This shows India’s rising power in the World.

**Achievements of BRICS**

• Because of financial crisis of 2008, BRICs started to cooperate. BRICS called for the reform of multilateral institutions. BRICS managed to push for international reform which led to IMF Quota reform in 2010.
• **BRICS New Development Bank**: 2014 Fortaleza Summit: See below
• They are developing a joint payments mechanism to reduce foreign trade
settlements in US $.
- **BASIC** (BRICS without Russia) is an offshoot dealing with Climate Change.
- **India** is taking the lead role in digital health, digital forensics, film technology, traditional medicine, sustainable water management, internships and fellowships.
- Potential of Brazil's investments in space, defence, agri equipment, animal husbandry, post harvest technologies and biofuels.

**BRICS New Development Bank**

- Because of overdomination of USA and EU in IMF, BRICS in Fortaleza summit came up with New Development Bank as an alternative to IMF and WB. Made by Fortaleza declaration in 2014. 1st time talked in Delhi (4th Summit) but established in Fortaleza. President – K V Kamath. Headquarter in Shanghai.
- The purpose of the Bank is to mobilise resources for infrastructure and sustainable development projects in BRICS and other emerging market economies and developing countries to complement the existing efforts of multilateral and regional financial institutions.
- NDB's Key area of Operation are clean Energy, Transport infra, irrigation, sustainable urban development and economic cooperation.
- The NDB functions on a consultative mechanism among the BRICS members with all the member countries possessing equal rights.
- **Contingent Reserve Arrangement (CRA)** signed in 2014 Fortaleza Declaration at 6th BRICS summit.
  1. The BRICS CRA aims to provide short-term liquidity support to the members through currency swaps to help mitigating BoP crisis situation and further strengthen financial stability.
  2. It has a corpus of US $ 100 billion. It will also contribute to strengthening global financial safety net and complement existing international arrangements (IMF).

**Significance of BRICS**

- India can collaborate on global issues like Terrorism, climate change, Energy security.
- India would need the support for its UNSC and NSG membership.
- NDB approved 1st set of loans which included US $ 250 million for India for Renewable Energy.
- BRICS gave 1 billion each to India, Brazil and South Africa.
Challenges pertaining in BRICS

- BRICS combined population is 40% World but trade is just 15%.
- Dilution under G20.
- India - China issues.
- No formalization due to draft or Constitution.
- Global political turmoil. Various regions still have conflict potential. **Arms control architecture is deliberately undermined** with US withdrawal from Intermediate Range Nuclear Force Treaty.
- **Structural imbalances** in the World Economy. Threats from unfair competition practices, sanctions, trade wars, abuse of US $ status as World reserve currency.
- **Terrorism and Climate Change.** Terrorism has caused loss of $1 trillion to World Economy.

Way Forward

- To become a true representative of Emerging economies, BRICS must **increase membership and expand its agenda** to climate change, development finance etc. **BRICS + and NextEleven (N – 11) = 11 countries poised to become the biggest economies in the World in 21st C after BRICS.** They are South Korea, Mexico, Bangladesh, Egypt, Indonesia, Iran, Nigeria, Pakistan, Phillipines, Turkey and Vietnam.
- It will be useful for BRICS to develop an **institutional research wing on the lines of OECD**, offering solutions relevant to the developing World.
- BRICS can consider on Climate Change and UN SDGs through setting up **BRICS Energy alliance** and Energy Policy.
- Idea of setting up a **BRICS Credit Rating Agency (BCRA)** as proposed by India (opposed to West Standard and Poor, Moody) can be on BRICS Future Agenda.

Source: AspireIAS Notes
IT Rules 2021 and analysis

Bone of contention The new IT rules introduce a three-tier structure for ensuring observance and adherence to the code of ethics by digital media publishers, and addressing the grievances made in relation to the publishers.

Level I - Self-regulation by the publishers
Level II - Self-regulation by the self-regulating bodies of the publishers
Level III - Oversight mechanism by the Central government

- The Kerala High Court restrained the Centre from taking coercive action against Live Law Media Private Ltd., which owns a legal news portal, for not complying with Part III of the new IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.
- The court issued notice to the Centre on a petition filed by the firm challenging the rules regulating digital news media, curated content (OTT platforms), and social media intermediaries.
- The petition said Part III of the rules imposed an unconstitutional three-tier complaints and adjudication structure on publishers.
- This administrative regulation on digital news media would make it virtually impossible for small or medium-sized publishers, such as the petitioner, to function. It would have a chilling effect on such entities, the petition said.
The creation of a grievance redressal mechanism, through a governmental oversight body (an inter-departmental committee constituted under Rule 14) amounted to excessive regulation, it contended.

The petitioner pointed out that Rule 4(2), which makes it mandatory for every social media intermediary to enable tracing of originators of information on its platform, purportedly in furtherance of Section 69 of the IT Act, violated Article 19(1)(a) (freedom of speech and expression).

It also deprived the intermediaries of their “safe-harbour protections” under Section 79 of the IT Act.

The petition also added that the rules obligating messaging intermediaries to alter their infrastructure to “fingerprint” each message on a mass scale for every user to trace the first originator was violative of the fundamental right to privacy of Internet users.
Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 have been framed under the Information Technology Act, 2000, and it supersedes the IT Rules, 2011.

It will ensure a harmonious, soft-touch oversight mechanism in relation to social media platform, digital media and OTT platforms etc.

Part- II of these Rules to Social Media shall be administered by Ministry of Electronics and IT.

These Rules empower the users of digital platforms to seek redressal for their grievances on infringement of their rights.

If due diligence is not followed by the intermediaries, including social media, safe harbour provisions will not apply to them.

Grievance Officer, appointed by intermediaries, shall acknowledge the complaint within 24 hours and resolve it within 15 days.

Ensures online safety and dignity of users, especially women, by
removing or disabling the contents within 24 hours of receipt of complaints of contents.

- A distinction between social media intermediaries and significant social media intermediaries is made, based on the number of users.
- Chief Compliance Officer shall be appointed for ensuring compliance with the Act and Rules.
- Nodal Contact Person shall be appointed for 24x7 coordination with law enforcement agencies.
- Part-III on Ethics Code in relation to digital media shall be administered by the Ministry of Information and Broadcasting.
- This Code of Ethics prescribes the guidelines to be followed by OTT platforms and online news and digital media entities.
- OTT platforms would self-classify the content into 5 age based categories - U (Universal), U/A 7+, U/A 13+, U/A 16+, A (Adult).
- Publishers of digital news would observe Norms of Journalistic Conduct of the Press Council of India and the Programme Code under the Cable Television Networks Regulation Act.
- A three-level grievance redressal mechanism has been established under the rules with 3 levels of self-regulation.


- These new rules broadly deal with social media and over-the-top (OTT) platforms.
- These rules have been framed in exercise of powers under section 87 (2) of the Information Technology (IT) Act, 2000 and in supersession of the earlier Information Technology (Intermediary Guidelines) Rules 2011.

Following are the features of the new rules

1. Categories of Social Media Intermediaries:

Based on the number of users, on the social media platform intermediaries have been divided in two groups:

1. Social media intermediaries.
2. Significant social media intermediaries.

2. Due Diligence to be Followed by Intermediaries:
In case, due diligence is not followed by the intermediary, safe harbour provisions will not apply to them.

The safe harbour provisions have been defined under Section 79 of the IT Act, and protect social media intermediaries by giving them immunity from legal prosecution for any content posted on their platforms.

3. Grievance Redressal Mechanism is Mandatory:

- Intermediaries shall appoint a Grievance Officer to deal with complaints and share the name and contact details of such officers.
- Grievance Officer shall acknowledge the complaint within twenty four hours and resolve it within fifteen days from its receipt.

4. Ensuring Online Safety and Dignity of Users:

- Intermediaries shall remove or disable access within 24 hours of receipt of complaints of contents that exposes the private areas of individuals, show such individuals in full or partial nudity or in sexual act or is in the nature of impersonation including morphed images etc.
- Such a complaint can be filed either by the individual or by any other person on his/her behalf.

5. Additional Due Diligence for the Significant Social Media Intermediaries:

- Appointments: Need to appoint Chief Compliance Officer, a Nodal Contact Person and a Resident Grievance Officer, all of whom should be resident in India.
- Compliance Report: Need to publish a monthly compliance report mentioning the details of complaints received and action taken on the complaints as well as details of contents removed proactively.

6. Enabling Identity of the Originator:

- Significant social media intermediaries providing services primarily in the nature of messaging shall enable identification of the first originator of the information.
- Required only for the purposes of prevention, detection, investigation, prosecution or punishment of an offence related to sovereignty and integrity of India, the security of the State, friendly relations with foreign States, or public order,
- Or of incitement to an offence relating to the above or in relation with rape, sexually explicit material or child sexual abuse material punishable with
imprisonment for a term of not less than five years.

7. Removal of Unlawful Information:

- An intermediary upon receiving actual knowledge in the form of an order by a court or being notified by the Appropriate Govt. or its agencies through authorized officer should not host or publish any information which is prohibited under any law in relation to the interest of the sovereignty and integrity of India, public order, friendly relations with foreign countries etc.

Rules for News Publishers and OTT Platforms and Digital Media:

For OTT:

- Self-Classification of Content: The OTT platforms, called as the publishers of online curated content in the rules, would self-classify the content into five age based categories- U (Universal), U/A 7+, U/A 13+, U/A 16+, and A (Adult).
- Parental Lock: Platforms would be required to implement parental locks for content classified as U/A 13+ or higher, and reliable age verification mechanisms for content classified as “A”.
- Display Rating: Shall prominently display the classification rating specific to each content or programme together with a content descriptor informing the user about the nature of the content, and advising on viewer description (if applicable) at the beginning of every programme enabling the user to make an informed decision, prior to watching the programme.

For Publishers of News on Digital Media:

- They would be required to observe Norms of Journalistic Conduct of the Press Council of India and the Programme Code under the Cable Television Networks Regulation Act 1995 thereby providing a level playing field between the offline (Print, TV) and digital media.

Grievance Redressal Mechanism:

A three-level grievance redressal mechanism has been established under the rules with different levels of self-regulation.

1. Level-I: Self-regulation by the publishers;
2. Level-II: Self-regulation by the self-regulating bodies of the publishers;
3. Level-III: Oversight mechanism.
Self-regulation by the Publisher:

- Publisher shall appoint a Grievance Redressal Officer based in India who shall be responsible for the redressal of grievances received by it.
- The officer shall take decision on every grievance received by it within 15 days.

Self-Regulatory Body:

- There may be one or more self-regulatory bodies of publishers.
- Such a body shall be headed by a retired judge of the SC, a High Court or independent eminent person and have not more than six members.
- Such a body will have to register with the Ministry of Information and Broadcasting.
- This body will oversee the adherence by the publisher to the Code of Ethics and address grievances that have not been resolved by the publisher within 15 days.

Oversight Mechanism:

- Ministry of Information and Broadcasting shall formulate an oversight mechanism.
- It shall publish a charter for self-regulating bodies, including Codes of Practices. It shall establish an Inter-Departmental Committee for hearing grievances.

Source: TH
The NITI Aayog launched its index in 2018 to monitor the country’s progress on the goals through data-driven assessment and to foster a competitive spirit among the States and Union Territories in achieving them. It provides holistic view on social, economic and environmental status of India and its State’s progress regarding SDGs. Developed by NITI in Collaboration with MoHFW, Global Green Growth India, UN of India.

SDG India Index is important for 3 things:
1. States can measure progress regarding targets + strategies;
2. States can identify priority areas;
3. They get to know data gaps to develop statistical system of country.

The SDG India Index 2020–21, developed in collaboration with the United Nations in India, tracks progress of all States and UTs on 115 indicators that are aligned to MoSPI’s National Indicator Framework (NIF).

The 115 indicators incorporate 16 out of 17 SDGs, with a qualitative assessment on Goal 17, and cover 70 SDG targets.

This is an improvement over the 2018–19 and 2019–20 editions of the index, which had utilised 62 indicators across 39 targets and 13 Goals, and 100 indicators across 54 targets and 16 Goals, respectively.

From covering 13 Goals with 62 indicators in its first edition in 2018, the third edition covers 16 Goals on 115 quantitative indicators, with a qualitative assessment on Goal 17.

States and Union Territories are classified as below based on their SDG India Index score:
1. Aspirant: 0–49
2. Performer: 50–64
4. Achiever: 100
India saw significant improvement in the Sustainable Development Goals (SDGs) related to clean energy, urban development and health in 2020, according to the NITI Aayog’s 2020 SDG Index. However, there has been a major decline in the areas of industry, innovation and infrastructure as well as decent work and economic growth. Although the index shows improvement on the inequality SDGs, the NITI Aayog has omitted key economic indicators used to measure inequality in income and expenditure last year and given greater weightage to social indicators instead.

Top scorers: Kerala retained its position at the top of the rankings in the third edition of the index, with a score of 75, followed by Tamil Nadu and Himachal Pradesh, both scoring 72.

Who is at the Bottom? At the other end of the scale, Bihar, Jharkhand and Assam were the worst performing States. However, all the States showed some improvement from last year’s scores, with Mizoram and Haryana seeing the biggest gains.

Developed by a global consultative process on holistic development, the 17
SDGs have a 2030 deadline.

- The NITI Aayog Index shows some improvement in the SDG on inequality, but a look at the indicators used to assess this goal shows that the think tank has changed the goalposts.

Thrust on social equality

- In 2019, the indicators for inequality included the growth rates for household expenditure per capita among the bottom 40% of rural and urban populations, as well as the Gini coefficient — a measure of the distribution of income — in rural and urban India.
- The 2018 indicators included the Palma ratio, another metric for income inequality.
- Such economic measures have been omitted from the indicators used for this SDG in the 2020 edition of the Index.
- Instead, it gives greater weightage to social equality indicators, such as the percentage of women and Scheduled Caste/Scheduled Tribe representatives in State Legislatures and the panchayati raj institutions and the levels of crime against the SC/ST communities.
- The only economic indicator this year is the percentage of population in the lowest two wealth quintiles.
<table>
<thead>
<tr>
<th>Rank</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>Kerala</td>
</tr>
<tr>
<td>74</td>
<td>Himachal Pradesh, Tamil Nadu</td>
</tr>
<tr>
<td>72</td>
<td>Andhra Pradesh, Goa, Karnataka, Uttarakhand</td>
</tr>
<tr>
<td>71</td>
<td>Sikkim</td>
</tr>
<tr>
<td>70</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>61</td>
<td>Chhattisgarh, Nagaland, Odisha</td>
</tr>
<tr>
<td>60</td>
<td>Arunachal Pradesh, Meghalaya, Rajasthan, Uttar Pradesh</td>
</tr>
<tr>
<td>57</td>
<td>Assam</td>
</tr>
<tr>
<td>56</td>
<td>Jharkhand</td>
</tr>
<tr>
<td>52</td>
<td>Bihar</td>
</tr>
</tbody>
</table>

Source: PIB

PM Garib Kalyan Anna Yojana (PMGKAY): Critical Analysis

GS-III | 04 June, 2021
Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY) is a scheme as part of Atmanirbhar Bharat to supply free food grains to migrants and poor.

Under this special scheme (PMGKAY), around 80 Crore NFSA beneficiaries covered under both categories of NFSA, namely Antyodaya Anna Yojana (AAY) and Priority Householders (PHH), will be provided with an additional quota of free-of-cost foodgrains (Rice/Wheat) at a scale of 5 Kg per person per month, over and above their regular monthly entitlements under NFSA.

Government of India will bear all expenditure of over ?26,000 Crore on account of food subsidy and Central assistance to states/UTs on account of intrastate transportation etc.

During the period May - November 2021, more than 81.35 crore people will be provided 5 kg free wheat/rice per person / month along with 1 kg free whole chana to each family per month. Wheat has been allocated to 6 States/UTs, - Punjab, Haryana, Rajasthan, Chandigarh, Delhi and Gujarat and rice has been provided to the remaining States/UTs. This is over and above the regular monthly entitlements under National Food Security Act, 2013 (NFSA).

Eligibility

- Families belonging to the Below Poverty Line - Antyodaya Anna Yojana (AAY) and Priority Households (PHH) categories will be eligible for the scheme.
- PHH are to be identified by State Governments/Union Territory Administrations as per criteria evolved by them. AAY families are to be identified by States/UTs as per the criteria prescribed by the Central Government:
  - Households headed by widows or terminally ill persons or disabled persons or persons aged 60 years or more with no assured means of subsistence or societal support.
  - Widows or terminally ill persons or disabled persons or persons aged 60 years or more or single women or single men with no family or societal support or assured means of subsistence.
  - All primitive tribal households.
  - Landless agriculture labourers, marginal farmers, rural artisans/craftsmen such as potters, tanners, weavers, blacksmiths, carpenters, slum dwellers, and persons earning their livelihood on daily basis in the informal sector like porters, coolies, rickshaw pullers, hand cart pullers, fruit and flower sellers, snake charmers, rag pickers, cobblers, destitutes and other similar
categories in both rural and urban areas.
- All eligible Below Poverty Line families of HIV positive persons.

30% PMGKAY recipients yet to get grains for May

- Almost a third of all ration card holders are yet to get their free foodgrains allocation for May under the Centre’s COVID-19 relief scheme, according to the Food Ministry.
- Out of the 79.25 crore beneficiaries under the National Food Security Act (NFSA), only 55 crore have so far received their 5 kg per person quota of free wheat or rice under the Pradhan Mantri Gareeb Kalyan Anna Yojana (PMGKAY), which was announced to mitigate the economic distress caused by the pandemic. Thus, more than 30% have still not got their benefit.
- However, almost 90% of beneficiaries have received their regular subsidised grain for the month, raising questions over why the free grain has reached fewer beneficiaries.
- An analysis of NFSA data shows that the only major States which have significant coverage gaps are Himachal Pradesh (23%), Madhya Pradesh (14%) and Gujarat (9%). Most other large States have less than a 5% gap, which can be used to issue new ration cards.
- In a May 24 order, the Supreme Court had directed that migrant workers and poor people without ration cards should be provided with dry ration under the Atma Nirbhar scheme — which was implemented last year — or any other scheme found suitable by the States and Centre.

National Food Security Act, 2013

- In PUCL vs Union of India, SC said Right to food is essential to Right to Life (Art 21). Hence NFSA has a rights based approach. Objective is to provide for food and nutritional security in human life cycle approach.
- All the above schemes PDS, RPDS, TPDS are merged except Antyodaya Anna Yojana which will continue to give 35 kg to poorest of poor.
- It covers 67% population (75% Rural and 50% Urban). Beneficiaries will be taken from SECC.
- People will get 5 kgs of foodgrains per person per month upto 5 family members at subsidised prices of Rs. 3/2/1 per Kg for rice/wheat/coarse grains. It uses TPDS mechanism.
- Special nutritional support to women and children.
  1. It includes meal to Pregnant women and lactating mothers during pregnancy and 6 months after child birth. They are entitled to a nutritious "take home ration" of 600 Calories and a maternity
benefit of >= Rs 6,000 for 6 months. Hence, PMMVY is merged. 5000 + 1000 rs under Janani Suraksha Yojana.

2. Children upto 14 years will get nutritious meals.
   - If there is no supply in 15 days, then beneficiaries will get Food Security Allowance.
   - Grievance redressal mechanism at District and State levels. Transparency and Accountability to be ensured.
   - Food fortification = Rice with Protein; Wheat with Zinc and Coarse Cereals with Iron.
   - Utilisation of Dryland area agriculture which is 52% land.
   - Development of Wasteland to generate 250 million tonnes additional production.
   - In Chandigarh, Puducherry and Dadra and Nagar Haveli, act is implemented in cash transfer mode and they will have the choice to buy foodgrains from open market.
   - The eldest woman in a household, >= 18 years, shall be the head of the household for the purpose of issuance of a ration card.

Source: TH

Black Carbon study by World Bank

About Black Carbon

- Black Carbon (BC) = It is a Pollutant as well as a GHG. It is a solid particle or aerosol & a component of Particulate Matter.
- Black carbon consists of pure carbon in several linked forms.
- It is formed through the incomplete combustion of fossil fuels, biofuel, and biomass (like soot & dust), and is emitted in both anthropogenic and naturally occurring soot.

- It is short lived. It is the strongest absorber of sunlight and heats the atmosphere directly. It can upset the monsoon system and disrupt
**Health Impacts**

- Black carbon (BC) is a pollutant known to aggravate breathing disorders.
- According to a recent study published, BC particles emitted by the vehicular exhaust and coal-fired power plants, have been detected on the fetus-facing side of the placenta. This is expected to affect the overall development of the unborn baby.

**Other terminologies**

- **Brown Carbon**: It is the ubiquitous & unidentified component of organic aerosol. Major source is biomass burning (wood). It is a GHG.
- **Blue Carbon**: It is the carbon stored & sequestered in coastal ecosystem like Mangrove forests, seagrass meadows or intertidal marshes.

**What is the news?**

- World Bank released a report on Black Carbon titled “Glaciers of the Himalayas, Climate Change, Black Carbon and Regional Resilience”.
- Black carbon (BC) deposits produced by human activity which accelerate the pace of glacier and snow melt in the Himalayan region can be sharply reduced through new, currently feasible policies by an additional 50% from current levels, a study by World Bank (WB) specialists has said.
- The research covers the Himalaya, Karakoram and Hindu Kush (HKHK) mountain ranges, where, the report says, glaciers are melting faster than the global average ice mass.
- The rate of retreat of HKHK glaciers is estimated to be 0.3 metres per year in the west to 1.0 metre per year in the east. BC adds to the impact of climate change.
- Full implementation of current policies to mitigate BC can achieve a 23% reduction but enacting new policies and incorporating them through regional cooperation among countries can achieve enhanced benefits, the
WB said in the report titled “Glaciers of the Himalayas, Climate Change, Black Carbon and Regional Resilience”.

- BC is a short-lived pollutant that is the second-largest contributor to warming the planet behind carbon dioxide (CO2). Unlike other greenhouse gas emissions, BC is quickly washed out and can be eliminated from the atmosphere if emissions stop.
- Unlike historical carbon emissions, it is also a localised source with greater local impact.

**Some of the ongoing policy measures to cut BC emissions are**

1. Enhancing fuel efficiency standards for vehicles,
2. Phasing out diesel vehicles and promoting electric vehicles,
3. Accelerating the use of liquefied petroleum gas for cooking and through clean cookstove programmes, as well as
4. Upgrading brick kiln technologies.

- However, with all existing measures, water from glacier melt is still projected to increase in absolute volume by 2040, with impacts on downstream activities and communities.

**Glacier melt produces flash floods, landslips, soil erosion, and glacial lake outburst floods.**

- Deposits of BC act in two ways hastening the pace of glacier melt:
  1. By decreasing surface reflectance of sunlight and
  2. By raising air temperature, the researchers point out.
- Specifically, in the Himalayas, reducing black carbon emissions from cookstoves, diesel engines, and open burning would have the greatest impact and could significantly reduce radiative forcing and help to maintain a greater portion of Himalayan glacier systems. More detailed modelling at a higher spatial resolution is needed to expand on the work already completed.
- Industry [primarily brick kilns] and residential burning of solid fuel together account for 45–66% of regional anthropogenic [man-made] BC deposition, followed by on-road diesel fuels (7–18%) and open burning (less than 3% in all seasons)” in the region.

Source: TH

VERITAS Mission and DAVINCI+ Mission: NASA Missions on Venus

GS-III | 04 June,2021
NASA announced two missions to Venus, Earth’s closest planetary neighbour, as part of its ‘Discovery Program’ that aims to explore and study the solar system.

Missions are:
1. The VERITAS (Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy) mission will map the surface of the planet, study its geology, and hunt for volcanic activity.
2. The DAVINCI+ (Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging) with its atmospheric probe, called Plus, will study the dense atmosphere of Venus to understand the trigger and evolution of the runaway greenhouse effect active on the planet.

The missions are funded for $500 million each and are expected to launch somewhere around 2028-2030.

Earth’s twin: Venus is often called Earth’s twin because of similar mass, size, gravity, surface composition and complex atmospheric processes.

However, we know much less about it compared to the other planetary neighbour, Mars. This is largely due to it being obscured by an extremely dense layer of atmosphere and clouds.

VERITAS Mission

- The VERITAS mission will study the planet’s geology with radar, map its entire surface topography in 3D and will try to understand why it developed differently from Earth.
- It will also study infrared emissions from the surface to map various kinds of rocks.
- The mission will also seek to understand if any volcanic or tectonic activity is present on the planet currently.
- It will also try to find out if any active volcanoes are releasing water vapour into the atmosphere, sustaining its greenhouse effect.

DAVINCI+ Mission

- The DAVINCI+ will measure the atmospheric composition of Venus and its formation and evolution.
- The mission will also try to determine if the planet held an ocean of liquid
water in the past.

- The mission will return the first high-resolution images of unique surface features known as “tesserae” on Venus, which are akin to the continents on Earth, and suggest the existence of plate tectonics.

**Other features**

- The mission’s accompanying **Plus probe** will drop into the atmosphere, making measurements of noble gas composition in the layers.
- Venusian atmosphere is richer in noble gases than Earth’s, indicating different means of evolution. The mission will also aim to understand why the atmospheric gases are in a runaway greenhouse effect and what set it in motion.
- Two smaller technology demonstrator missions will also fly with VERITAS and DAVINCI+.
- The “ultra-precise” Deep Space Atomic Clock-2 will be tested on VERITAS while the Compact Ultraviolet to Visible Imaging Spectrometer (CUVIS) will fly with DAVINCI+ to make high-resolution UV measurements.
- The latter is expected to aid the understanding of how large amounts of incoming solar energy and UV gets absorbed by the atmosphere around Venus.

*Source: The Print*
Monetary Policy Committee and Inflation in India

What is Inflation?

- Inflation can be defined as a calculated surge in the average prices of goods and services for a longer duration in the economy.
- It is a macro concept, wherein the effect of inflation is seen over a large basket of goods.
- The ultimate effect of inflation is that the value of money is reduced i.e., the purchasing power of money is reduced.

Types of Inflation

1) Cost Push Inflation

- It is caused by rise in the prices of imgs like raw material cost, electricity charges or wage rate (including a rise in profit margin made by the producer).
- Ex. Price rise of coal/ crude oil may cause price rise in industries which use coal.
- In India, cost push inflation is the major supply side factor producing inflation.
- It can’t be managed by monetary policy intervention by RBI. We have to augment production of commodities or imports. Other conventional measures are providing incentives like subsidies, tax cuts, and launching production boosting programmes like NFSM.
- Other reasons:
  1. Increase in price of imgs
  2. Hoarding and Speculation of commodities
  3. Defective Supply chain
  4. Increase in indirect taxes
  5. Depreciation of Currency
  6. Crude oil price fluctuation
  7. Defective food supply chain
  8. Low growth of Agricultural sector
  9. Food Inflation (growth agriculture sector has been averaging at 3.5%)

2) Demand Pull Inflation

1. It is caused by increased demand or income in the economy (due to increased money supply), without adequate increase in supply of output.
2. Ex. “too much money chasing too few goods” is an instance of demand pull inflation.
3. Monetary Policy is the best way to tackle demand pull inflation. Increase in Repo rate will decrease demand for loans. Additional taxation by the Govt and reduced public expenditure are also good to reduce demand.
4. This type of inflation is caused due to an increase in aggregate demand in the economy. Other reasons are:
   - A growing economy or increase in the supply of money – When consumers feel confident, they spend more and take on more debt. This leads to a steady increase in demand, which means higher prices.
   - Asset inflation or Increase in Forex reserves - A sudden rise in exports forces a depreciation of the currencies involved.
   - Government spending or Deficit financing by the government – When the government spends more freely, prices go up.
   - Due to fiscal stimulus
   - Increased borrowing
   - Depreciation of rupee

Other Types of Inflation

i. Disinflation: Reduction in the rate of inflation
ii. Deflation: Persistent decrease in price level (negative inflation)
iii. Reflation: Price level increases when economy recovers from recession
   Based on value of inflation
iv. Creeping inflation – If rate of inflation is low (upto 3%)
v. Walking/Trotting inflation – Rate of inflation is moderate (3-7%)
vi. Running/Galloping inflation – Rate of inflation is high (>10%)
vii. Runaway/Hyper Inflation – Rate of inflation is extreme
viii. Stagflation: Inflation + Recession (Unemployment)
ix. Suppressed / Repressed inflation: Aggregate demand > Aggregate supply.
   Here govt will not allow rising of prices.
x. Open inflation: Situation where price level rises without any price control measures by the government.
xii. Core inflation: Based on those items whose prices are non-volatile.
xii. Headline inflation: All commodities are covered in this.
xii. Structural inflation: Due to structural problems like infrastructural bottlenecks.

Stagflation:

- Stagflation is a situation where an economy faces both high inflation and low growth (and high unemployment).
- The root cause for Stagflation is attributed to a drastic fall in consumer
demand and it is possible because of the supply side issues.
- Retail Inflation: Highest in Vegetable > Pulses and Products > Meat and Fish > Egg.
- “Phillips Curve”: there is an inverse relationship between inflation and unemployment. Hence policy makers are advised to maintain a certain inflation rate to ensure that unemployment is kept to a minimum and the economy is operating at full capacity.

What causes Inflation?

- Inflation is mainly caused either by demand Pull factors or Cost Push factors. Apart from demand and supply factors, inflation sometimes is also caused by structural bottlenecks and policies of the government and the central banks.
- Therefore, the major causes of Inflation are:
  - Demand Pull Factors (when Aggregate Demand exceeds Aggregate Supply at Full employment level).
  - Cost Push Factors (when Aggregate supply increases due to increase in the cost of production while Aggregate demand remains the same).
  - Structural Bottlenecks (Agriculture Prices fluctuations, Weak Infrastructure etc.)
  - Monetary Policy Intervention by the Central Banks.
  - Expansionary Fiscal Policy by the Government.

How to measure Inflation?

1) Consumer Price Index (CPI)

- It is a measure of change in retail prices only of goods and services. It is calculated on a monthly basis.
- It is used as an indicator of inflation, a tool for monitoring price stability and as a deflator in national accounts.
- The Dearness allowance of Govt employees and wage contracts between labour and employer is based on CPI.
- CPI is calculated by Laspeyre’s index = \[\text{Total cost of a fixed basket of goods and services in the current period} \times 100\] divided by Total cost of the same basket in the base period.
- CPI consists of services like housing, education, medical care, recreation etc.
- Presently the CPIs are:
  1. CPI (IW): Industrial workers; CPI (AL): Agricultural Labourers and; CPI (RL): Rural Labourers. They are occupation specific and compiled by Labour Bureau.
  2. CPI (Urban); CPI(Rural) and CPI (Combined): Have wider coverage and are
compiled by CSO (now NSO). CPI for Urban Non Manual Employees was earlier computed by CSO but discontinued since 2008.

- RBI uses CPI-combined as the sole inflation measure for monetary policy.
- Price data are collected from selected towns by the Field Operations Division of NSSO and from selected villages by the Department of Posts.
- NREGA wages are currently linked with CPI (Agriculture Labour) but now Government has decided to index it to a new CPI (Rural).

1. CPI (R) is wider and covers more non food items like Insurance, Health and Education. CPI (AL) includes more food items.
2. Hence CPI (R) reflects better rural consumption basket compared to CPI (AL).
3. A living wage should include health, education and insurance besides base essentials.

**Wholesale Price Index (WPI)**

- It is aka Point to Point Inflation.
- WPI measures the average change in the prices of only goods (not services) at wholesale level. Base year 2011 - 12. 697 goods.
- Components and Prices tracked are:
  1. Manufactured products (64%): Ex factory price.
  2. Primary Articles (23%): Mandi price for Agri commodities.
  3. Fuel and Power (13%): Ex mines price for minerals.
- Calculated by Office of Economic Advisor (OEA), DPIIT, Ministry of Commerce
- The main uses of WPI are the following:
  1. Check Inflation.
  2. It is used as a deflator for many sectors including GDP by CSO.
  3. WPI is also used for indexation by users in business contracts.
  4. Global investors also track WPI as one of the key macro indicators for their investment decisions.
  5. It includes manufacturing imgs and intermediate goods.
- Revision of Base Year to 2011 - 12 in 2017
  1. It is a regular exercise to capture structural changes in the economy and improve the quality and coverage of index.
  2. In 2017, the Base year was revised (7th time) from 2004 - 05 to 2011 - 12 (based on Dr. Saumitra Chaudhuri Committee) to align it with other macroeconomic indicators like GDP and IIP.
  3. It also changed the basket of commodities and assigned new weights to the commodities.
  4. WPI with Base year 2011 - 12 doesn't include taxes to remove the
impact of fiscal policy.
5. Now, WPI series is closer to Producer Price Index which reflects the change in average prices of goods & services either as they leave or enter the production process. It measures changes in the prices that producers get.

What is the difference between WPI & CPI?
1. WPI, tracks inflation at the producer level and CPI captures changes in prices levels at the consumer level.
2. Both baskets measure inflationary trends (the movement of price signals) within the broader economy, the two indices differ in which weightages are assigned to food, fuel and manufactured items.
3. WPI does not capture changes in the prices of services, which CPI does.

Headline Retail Inflation vs Core Inflation

- **Headline inflation** is the raw inflation figure reported through the Consumer Price Index (CPI) that is released by CSO. The headline figure is not adjusted for seasonality or for the often-volatile elements
- **Core inflation** removes the CPI components that can exhibit large amounts of volatility from month to month, which can cause unwanted distortion to the headline figure. The most commonly removed factors are those relating to the cost of food and energy.

Urjit Patel Committee on Monetary Policy Committee

- The expert committee was headed by Urjit R. Patel, Deputy Governor of the Reserve Bank of India.
- The committee felt that inflation should be the nominal anchor for the monetary policy framework. The nominal anchor or the target for inflation should be set at 4 per cent with a band of +/- 2 per cent around it.
- “It should be set by the RBI as its predominant objective of monetary policy in its policy statements,” the report said.
- The nominal anchor should be communicated without ambiguity, so as to ensure a monetary policy regime shift away from the current approach to one that is centred around the nominal anchor.
- “The nominal anchor should be defined in terms of headline CPI inflation, which closely reflects the cost of living and influences inflation expectations relative to other available metrics,” the committee felt.
- “This target should be set in the frame of a two-year horizon that is
consistent with the need to balance the output costs of disinflation against the speed of entrenchment of credibility in policy commitment,” the report said.

- Since food and fuel account for more than 57 per cent of the CPI on which the direct influence of monetary policy is limited, the commitment to the nominal anchor would need to be demonstrated by timely monetary policy response to risks from second-round effects and inflation expectations in response to shocks to food and fuel, the committee pointed out.
- The committee asked the Central Government to ensure that the fiscal deficit as a ratio to GDP (gross domestic product) is brought down to 3.0 per cent by 2016-17.

Monetary policy committee

1. The panel felt that the monetary policy decision-making should be vested with a monetary policy committee (MPC).
2. It went on to recommend that the Governor of the RBI should be the Chairman of the MPC.
3. It felt that the Deputy Governor in-charge of monetary policy could be the Vice-Chairman.
4. The Executive Director in charge of monetary policy could be its member. It could have two external members.
5. The full-time external members would have full access to information/analysis generated within the Reserve Bank.
6. The term of office of the MPC could be three years, without prospect of renewal.
7. Each member of the MPC will have one vote with the outcome determined by majority voting, which has to be exercised without abstaining. Minutes of the proceedings of the MPC will be released with a lag of two weeks from the date of the meeting,” the committee said.

Monetary Policy Committee, 2015

- 1st time suggested by Y V Reddy Committee. Then Tarapore Committee (2006); Percy Mistry Committee (2007); Raghuram Rajan Committee (2009) and FSLRC Committee (2013) and Urjit Patel Committee (2013) talked about MPC.
- Monetary Policy Committee (MPC) was constituted as per Section 45ZB under the RBI Act of 1934 by the Central Government.
- RBI Governor is the head of MPC.
- There are 2 core tasks = Inflation targeting + Policy rate.
- The major four objectives of the Monetary Policy are mentioned below:
  - To stabilize the business cycle.
  - To provide reasonable price stability.
To provide faster economic growth.
- Exchange Rate Stability.
- Center determines inflation target every 5 years. RBI maintains it.
- 6 members of MPC =
  - RBI Governor, Deputy Governor related to MPC, 1 RBI Board member.
  - 3 Govt nominees appointed through Selection Committee consisting of Cabinet Secretary head, RBI Governor, Secretary of Department of Economic Affairs, Ministry of Finance and 3 experts.
- Tenure is 4 years and they are not eligible for reappointment.
- Decision is binding on RBI.
- Quorum = 4 vote including RBI Governor.

What is the news?
- The Reserve Bank of India (RBI) left benchmark interest rates unchanged and reiterated that it would retain its accommodative stance for “as long as necessary to revive and sustain growth on a durable basis”, as it cut its GDP growth forecast for the fiscal year by 100 basis points to 9.5%.
- The RBI's Monetary Policy Committee, after taking stock of the evolving macro-economic and financial conditions as well as the impact of the second wave of the COVID-19 pandemic, voted unanimously to keep the policy repo rate unchanged at 4%, Governor Shaktikanta Das said.
- Acknowledging that the sudden rise in COVID-19 infections and fatalities had impaired the nascent recovery that was underway, Mr. Das said the second wave had, however, “not snuffed it out”.
- Ramping up the vaccination drive and bridging the gaps in healthcare infrastructure could mitigate the pandemic’s devastation, he stressed.
- The bank also marginally raised its projection for CPI inflation during 2021-22 to 5.1%.

Source: TH

DAC nod for building 6 conventional submarines
GS-II | 05 June,2021

DAC nod for building 6 conventional submarines

What is Defense Acquisition Council?
The Defence Acquisition Council is the highest decision-making body in the Defence Ministry for deciding on new policies and capital acquisitions for the three services (Army, Navy and Air Force) and the Indian Coast Guard.

The Minister of Defence is the Chairman of the Council.

It was formed, after the Group of Ministers recommendations on 'Reforming the National Security System', in 2001, post Kargil War (1999).

What is the news?

- The Defence Acquisition Council (DAC), headed by Defence Minister Rajnath Singh approved the issuance of a Request For Proposal (RFP) for the construction of six conventional submarines under Project-75I at an estimated cost of ₹43,000 crore.
- At a meeting, it also approved the procurement of air defence guns and ammunition for the Army at an approximate cost of ₹6,000 crore.
- This is a landmark approval, being the first case processed under the Strategic Partnership (SP) model. This would be one of the largest ‘Make in India’ projects and it will create a tiered industrial ecosystem for submarine construction in India.
- With this approval, India would be enabled to achieve its 30-year submarine construction programme envisioned by the government to acquire national competence in their building and for Indian industry to independently design and construct them, he noted.

What is Strategic Partnership model?

- The SP model of the Defence Procurement Procedure (DPP) aims to promote the role of Indian industry in manufacturing and build a domestic defence industrial ecosystem.
- One company would be selected for each area based on its competence.
- That company would then tie up with the foreign Original Equipment Manufacturer selected through the procurement process, to build the platform in India with significant technology transfer.

Advantages of SP model
It will boost private sector participation.
It will create domestic expertise in four key areas, namely, fighter aircraft, helicopters, submarines, and armoured vehicles and main battle tanks.
It will enhance competition, increase efficiencies and facilitate faster and more significant absorption of technology.
It is also aimed at creating a tiered industrial ecosystem, trigger innovation and enable participation in global value chains as well as promote exports.

Concerns of SP model

- The Armed Forces feel that the SP model will block new technology and new players coming to the defence sector.
- The existing defence players argue for committed orders for the next 30 years to give them the economies of scale as defence involves large investments.

Defence Acquisition Procedure (DAP) 2020

- Recently, a new Defence Acquisition Procedure (DAP) (erstwhile Defence Procurement Procedure or DPP), 2020 was released by the Ministry of Defence (MoD).
- Defence Acquisition Procedure (DAP)-2020 envisages the basic tenets of ‘Aatmanirbhar Bharat Abhiyan’ and encourages indigenous designing and manufacturing of defence items. The proposals for indigenous design and manufacturing are considered under ‘Make’ Procedure of DAP-2020.
- The ‘Make’ Procedure aims to achieve the objective of self-reliance by involving greater participation of Indian industries including private sector through following mechanisms:
  1. Make-I (Government Funded): This involves design and development of equipment, systems, major platforms or upgrades thereof by the industry. Ministry provides financial support up to 70% of prototype development cost or a maximum of Rs. 250 crores per Development Agency (DA).
  2. Make-II (Industry Funded): This includes design & development and innovative solutions by an Indian vendor, for which no Government funding is provided, but it has the assurance of procurement on successful prototype development.
Ongoing Defense Acquisition Procedures:

- As of date, there are **4 ongoing projects** under the Make-I category.
- Further, 56 proposals have been accorded ‘Approval in Principal’ under the Make-II category out of which 23 proposals have been accorded Acceptance of Necessity (AON).
- In addition, Defence Research and Development Organisation (DRDO) has also undertaken 233 projects during the past three years since 2018.
- The projects include new defence equipment such as Cruise missile, Hypersonic missile, Anti-Ship missile, Extended Range Anti-Submarine Rocket, Mounted Gun System, Ammunitions, Electronic Warfare system, Radars, Torpedos, High Endurance Autonomous Underwater Vehicles, etc.
- Further, in order to promote indigenous design and development of defence equipment ‘Buy {Indian-IDDM (Indigenously Designed, Developed and Manufactured)}’ category under DAP is accorded topmost priority for procurement of capital equipment.
- Ministry of Defence has notified a ‘Negative list’ of 101 identified items for which there would be an embargo on the import beyond the timeline indicated against them. This is a big step towards self-reliance in defence.
- This offers a great opportunity to the Indian defence industry to manufacture these items indigenously and develop capabilities to meet the requirements of the Armed Forces.
- This list includes some high technology weapon systems like artillery guns, assault rifles, corvettes, sonar systems, transport aircrafts, light combat helicopters (LCHs), radars etc. to fulfil the needs of our Defence Services.
- Further, an indigenization portal namely SRIJAN has also been launched in August, 2020 for Defence Public Sector Undertakings (DPSUs)/Ordnance Factory Board (OFB)/Services with an industry interface to provide development support to MSMEs/Startups/Industry for import substitution.

Key Points of DAP 2020

The DAP contains policies and procedures for procurement and acquisition from the capital budget of the MoD in order to modernise the Armed Forces including the Coast Guard.

Evolution of DAP
The first Defence Procurement Procedure (DPP) was promulgated in 2002. A committee under the chairmanship of the Director General (Acquisition) was constituted to review the Defence Procurement Procedure (DPP) 2016. DPP 2016 was released replacing the DPP 2013 based on the recommendations of the Dhirendra Singh committee. It focussed on indigenously designed, developed and manufactured weapon systems. It was facing several issues like lack of transparency (leading to Rafale Scam), inconvenient offset regulations etc.

Objective

- Turning India into a global manufacturing hub.
- Aligned with the vision of the Government of Atmanirbhar Bharat and empowering Indian domestic industry through Make in India initiative.

Salient Features

For Ease of Doing Business:

- Time-Bound Defence Procurement Process and Faster Decision Making: By setting up a Project Management Unit to support contract management and to streamline the Acquisition process.
- Revised Offset Guidelines: Preference will be given to manufacture of complete defence products over components and various multipliers have been added to give incentivisation in discharge of offsets.
- Further, there will be no offset clause in government-to-government, single vendor and Intergovernmental Agreements (IGA).
- Offsets are a portion of a contracted price with a foreign supplier that must be re-invested in the Indian defence sector, or against which the government can purchase technology.
- Multipliers are credit values earned on offset transactions. A multiplier of 3 means a foreign company can claim credits up to three times its actual offset investment.
- The offset policy for defence deals was adopted in 2005 for all defence capital imports above Rs. 300 crore under which the foreign vendor is required to invest at least 30% of the value of the contract in India.
- The offset clause was hindering the transfer of technology, according to a recent CAG report.
- Rationalization of Procedures for Trials and Testing: The scope of trials will be restricted to the physical evaluation of core operational parameters.
To Develop India into Global Manufacturing Hub:

- **FDI in Defence Manufacturing**: Provisions have been incorporated like a new category ‘Buy (Global – Manufacturer in India)’, to encourage foreign companies to set up manufacturing through its subsidiary in India.

- **To promote Make in India and Atmanirbhar Bharat initiatives**:
  - **Reservation in Categories for Indian Vendors**: Some categories like Buy (Indian Indigenously Designed Developed and Manufactured - IDDM), Production Agency in Design & Development etc. will be exclusively reserved for Indian Vendors and FDI of more than 49% is not allowed.
  - **Ban on Import of Certain Items**: With a view to promote domestic and indigenous industry, the MoD will notify a list of weapons/platforms banned for import.
  - **Indigenisation of Imported Spares**: Steps to promote manufacturing of parts in India have been taken. This includes establishment of co-production facilities through Intergovernmental Agreements (IGA) achieving ‘Import Substitution’ and reducing Life Cycle Cost.

- **Overall Enhancement in Indigenous Content (IC)**: This has been done in all the categories, for products like softwares etc, as follows:

**Other Features**

- **Cost Cutting**: Leasing has been introduced as a new category for acquisition in addition to the existing ‘Buy’ and ‘Make’ categories so that periodical rental payments are made instead of huge capital investment.
- **This will be useful for military equipment not used in actual warfare like transport fleets, trainers, simulators, among others.**

**Other Related Initiatives:**

- Recently, the Ministry of Defence has formulated a **Draft Defence Production and Export Promotion Policy 2020 (DPEPP 2020).**
- **Innovations for Defence Excellence (iDEX)** has been operationalised to provide necessary incubation and infrastructure support to the startups in the defence area.
- iDEX would be further scaled up to engage with 300 more startups and develop 60 new technologies/products during the next five years.
- **Mission Raksha Gyan Shakti** was launched to promote a greater culture of innovation and technology development and file a higher number of patents in Defence Public Sector Undertakings (DPSUs), Ordnance Factory Board (OFB).
Way Forward

- Self-reliance in defence manufacturing is a crucial component of effective defence capability and to maintain national sovereignty and achieve military superiority. The DAP 2020 not only protects the interests of domestic manufacturers by indigenization of technology, but also provides impetus to foreign investment in the country.
- Given the key geostrategic challenges, emanating from the threat of two-front war (against China and Pakistan combinedly), India needs to carry out much-needed defence reforms. DAP 2020 is the one of the many needed defence reforms.

Source: TH
GST collections in May drop to lowest level since September 2020

- India’s Gross GST revenue fell to ₹1.02 lakh crore in May, from a record ₹1.41 lakh crore in April, but the number was likely to be revised upwards, the government said.
- The May collections, broadly pertaining to transactions in April, are the lowest since September 2020, which recorded revenue of ₹95,480 crore.
- Economists expect the collections to dip further in June even though the current lockdowns across the States may not be denting activity as much as last year’s national lockdown.

Goods and Service Tax – GST (Indirect Tax)

- Through 101st Amendment Act guided by Art 301 Govt introduced GST includes both Goods and Services
- Art 279 A is introduced to make GST workable. Enforced from 1 July 2017.
- Exceptions
  1. Except Alcohol and Electricity all items included.
  2. 5 Petroleum products are temporarily out of GST (to control losses to the State): Crude Oil, petrol, diesel, ATF and Natural Gas.
- **GST Council**
  1. Constitutional Body. Responsible for Tax rates, listing of items and any dispute resolution among States and provide participation of all States and UTs.
  2. Headed by FM. Represented by FM of States. Vice Chairperson from respective State FM.
  3. Voting: 2/3rd State and 1/3rd Center. Decision is based on majority voting.
  4. Quorum = 50% and Majority = 75% members present.
- It preserves Principle of Cooperative Federalism. But if Tax rates are decided States have no autonomy to modify it which goes against Cooperative Federalism.
- GST tried to provide Single Tax for supply of all goods and services (solved problem of multiple taxation).
- It is a destination based tax (opposite of VAT) guided by 1 Tax 1 Nation 1 Market to decrease cascading effect and decrease cost of production and
increase export and control inflation.
- GST is based on IT technology hence minimum interface between tax official and citizens.
- It is a part of Ease of Doing Business by doing away with multiple taxation, multiple filling and multiple compliance. Now all firms can file same tax, get GST number to get the benefit of Input Tax Credit.

For PAN India Company a person should take different GST number in different States because State has State GSTs.

**Taxes subsumed under GST**
1. Central Taxes = Excise Duty (Medicinal and Toiletry Goods), Additional Duties of Excise (Goods of special importance), Additional Custom Duties, Special Additional Custom duties, Service Tax, Central Surcharges and Cess.

**Provisions of GST**
1. As it is a Destination Based Tax, Chances is that UP Govt (Destination State) can earn more GST than Maharashtra which is manufacture state. Hence Govt came up with Cess @ 15% on more luxurious goods to compensate lossmaking states at 15% over peak rate of 28% but at times the effective rate is < 40%. Hence, effective rate of cess is 12%.
2. Exemption limit in plain area increased from 20 to 40 lakh rs. and in Northeast and Hilly regions, increased from 10 to 20 lakhs.
3. Govt introduced GST Composition Scheme:
   1. If a Trader, manufacturer and restaurant; if annual turnover <= 1.5 crore then the Trader and Manufacture must pay 1% of GST and Restaurant can pay 5% of GST. But they are not eligible for img tax credit mechanism.
   2. In service sector 18% is GST but if any enterprise has turnover of 50 lakhs then you can pay 6% They are not eligible for img tax credit off. Under it Center and State share is 50:50.
   3. 4 Types of GST: CGST, SGST, UTGST and IGST imposed on imported goods or custom duties and interstate trade distributed to state as per FC recommendations.
4. Rates
1. 0% = Essential goods. Unbranded. Unpacked. Export and supplies to SEZ are 0 rated.
2. 5% = Packed essential goods. Branded. Important for consumption of masses.
3. 12% = Daily health and hygiene. Basic Raw material for industries, few construction items (except Cement).
4. 18% = Majority services.
5. 28% = Luxury goods and Cement.
6. Separate rate for precious metals = 3% and semi precious stones = 0.25%.
7. For administrative convenience, if a Business have turnover < 1.5 crore 90% belongs to State and 10% = Central. But if Business > 1.5 crore turnover then Centre: State share has 50:50.
8. Now J&K is also a part of GST.

5. Exceptions
- Except Alcohol and Electricity all items included.
- 5 Petroleum products are temporarily out of GST (to control losses to the State): Crude Oil, petrol, diesel, ATF and Natural Gas.

6. Input Tax Credit Off of State GST will be adjusted from State GST.
7. e-filing of returns from e-payment, netbanking, RTGS.
8. Refund of taxes to be sought by taxpayers or any other person is within 2 years time period from date.
9. Self assessment of tax payable by registered person provided by audit and he should comply provisions.
10. Formation of advanced ruling authority in every State to enable tax payers to seek a binding clarity on taxation matter. Center should adopt such authority.
11. GST Appellate Tribunal = Head Commissioner Level to solve disputes relating to GST amount.
12. Anti Profiteering Clause: To ensure that benefit of GST and Input Tax credit off can pass to consumers like Monetary Transmission of RBI.
13. 3 Tier Structure
   1. Standing Committee on Anti Profiteering
   2. Screening Committee at State Level
   3. NAPA: (National Anti Profiteering Authority) to ensure that benefits that occur to entities due to decreased cost are passed on to customers. Entities that hike prices to get profits will be checked.

14. They will 1st identify business and ask him to comply. They can ensure payment of compensation to consumers at 18% from date of imposing high prices. If they do not accept, they can cancel its licence.
Schemes for Fisheries sector in India

Need for safeguarding Aquatic ecosystem?

- The sustainability and conservation of our aquatic ecosystem which constitutes of various freshwater habitats, with oceans and seas covering more than 70 percent of the Earth, has gained a lot of attention in recent times at national and international forums.
- It also underpins key economic sectors, such as fisheries and tourism. However, today these habitats are constantly facing huge threats from various actors.
- As predicted by eminent scientists and practitioners across the world, millions of tonnes of our plastic waste released into these habitats by humans are harming creatures, including seabirds, turtles, crabs and other species.
- To curb the impact caused to these habitats, it is imperative that more awareness be created amongst nations to take responsible actions, work towards conservation of environment and leverage existing resources to reverse and restore the planet Earth.
- However, at the same time one must understand that protecting and restoring the entire ecosystem is a massive task and needs to be taken up collectively by nations across the globe on priority and at a faster pace.
- The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India truly recognizes the urgency to protect these habitats while ensuring optimal utilization of our national resources.
- In view of the same, the schemes and programmes being implemented by the Department, aims at the growth of the fisheries and aquaculture sector, keeping sustainability of environment as prime focus.

Government Efforts

Blue Revolution

- “Blue Revolution”, the flagship scheme of the Department, launched in the
year 2015, aimed to achieve economic prosperity of the country and the fishers and fish farmers as well as contribute towards food and nutritional security through full potential utilization of water resources for fisheries development in a sustainable manner, keeping in view the bio-security and environmental concerns.

- Under Blue Revolution, total funds of Rs. 2573 crores were released as central assistance to various States and Union Territories and various organisations for sustainable and holistic development of fisheries and fishers’ welfare, along with promotion of environment friendly aquaculture practices.
- As part of Blue Revolution scheme, various environment friendly technologies were adopted for safeguarding of our aquatic ecosystem.
- Recirculating Aquaculture Systems (RAS) were supported; RAS technology is eco-friendly, water efficient, and is a highly productive intensive farming system, with zero environmental impact.
- Likewise, Sea Cages for marine fish culture were promoted and supported, Seaweed cultivation has also been promoted, fish lean/ban period have been implemented during the breeding season amongst many other initiatives.
- Solar panel units for producing energy to operate water pumps, aerators and carrying out other fisheries related activities were provided assistance under the Blue Revolution Scheme.
- This entailed providing one-time central assistance to beneficiaries for procurement and installation of solar power support system for fisheries. These initiatives amongst others have played a major role in protecting the land as well as the aquatic ecosystems.

**Pradhan Mantri Matsya Sampada Yojana (PMMSY)**

- To further build-on the achievements in the fisheries sector through implementation of the Blue Revolution Scheme and develop the sector in a sustainable and responsible manner, the Government of India launched a flagship scheme of “Pradhan Mantri Matsya Sampada Yojana (PMMSY)” in May 2020, with highest ever estimated investment of Rs. 20,050 crore under the Aatmanirbhar Bharat package.
- PMMSY aims at sustainable and responsible development of fisheries sector with focus on infrastructure, species diversification, sustainable livelihoods, aquatic health management, robust database, innovations, collectivization, modernization of value chain, export promotion, establishing a robust fisheries management framework, with special focus on implementing...
technologies that ensure protection of habitats and fisheries wealth.

- In this context, the Department is taking up a range of activities including implementation of bio-flocs, Recirculatory Aquaculture System (RAS) with special focus, Reservoir cage culture, open sea cage culture for conservation of marine fisheries and risk mitigation to marine fishers, sea weed cultivation for supporting livelihood and ushering prosperity for coastal communities especially women in sustainable environment friendly manner along with providing livelihood and nutritional support for fishers' families for conservation of fisheries resources during fishing ban/lean period.

Furthermore, the Department is also actively promoting installation of Bio-toilets in fishing vessels to keep the marine environment clean and prevent contamination of marine resources.

- PMMSY aims to promote sustainable fish production systems/methods with minimal environmental impacts to support more crop per drop.

- Integrated Modern Coastal Fishing Villages will be developed under PMMSY with investment of Rs. 750 crore to leverage Blue economy/Blue growth with an aim to maximize economic and social benefits to coastal fishers while minimizing environmental impact through sustainable fishing practices.

Project proposal with total outlay of Rs. 2881.41 crore have been approved under PMMSY during 2020-21 for sustainable development of fisheries and fisheries related infrastructure including fishers' welfare.

Source: PIB
Punjab, T.N. and Kerala top education index ranking
Punjab, Tamil Nadu and Kerala have all scored higher than 90% in the Education Ministry's Performance Grading Index for 2019-20, which was...
released.

- **Gujarat dropped from second to eighth rank in the index, while Madhya Pradesh and Chhattisgarh** are the only States which have seen actual regression in scores over this period.
- The index monitors the progress that the States and Union Territories have made in **school education** with regard to learning outcomes, access and equity, infrastructure and facilities, and governance and management processes.
- Punjab recorded the highest score of almost 929 out of a possible 1,000, showing a huge jump from 769 last year.
- The State topped the charts in terms of equity, infrastructure and governance, and shared the top spot in the domain of access with Kerala.
- In fact, Punjab overtook the Union Territory of Chandigarh, which topped both previous editions of the index, but has now slid to second place with a score of 912.
- Tamil Nadu also overtook Kerala, with a score of 906, largely driven by improvements in the State’s educational governance and management, as well as in terms of infrastructure and facilities.
- Gujarat, which had the second highest score in the previous edition, dropped to eighth place. It regressed in the key domain of access, which measures enrolment of students in school and the ability to keep them from dropping out as well as mainstreaming out-of-school students. Its progress in other areas also did not keep pace with other States.
- Madhya Pradesh and Chhattisgarh saw a glaring drop in their scores, pushing both States to an overall performance that was worse than in the previous edition. The new Union Territory of Ladakh was included separately for the first time in this edition, and had the lowest score of just 545.

Source: TH

---

**Labour Codes of India**

**GS-III | 07 June,2021**

**Labour Reforms**
Labour is an important topic of UPSC GS Paper II and Paper III in Mains Examination. Recent Labour Codes are highly important even for Essay.

Labour is in the Concurrent List in Schedule 7 of the Constitution. Hence, both the Parliament and the state legislatures can enact laws on it.

Before the new labour codes were passed, there were more than 40 central laws and more than 100 state laws on labour and related matters.

The Second National Commission on Labour (2002) recommended that the central labour laws should be integrated into groups like: Industrial relations, Wages, Social security, Safety and Welfare and working conditions.

The Commission suggested simplification of the labour codes for the sake of transparency and uniformity.

In 2019, the Central Government introduced four bills on labour codes to consolidate 29 central laws. These are:

1. Code on Wages
2. Industrial Relations Code
3. Social Security Code

Code on Wages, 2019

- The Wages Code seeks to regulate wage and bonus payments in all employments where any industry, business, trade or manufacture is carried out.
- This code replaces the following laws:

  1. Minimum Wages Act, 1948
  2. Payment of Wages Act, 1936
  3. Payment of Bonus Act, 1965
  4. Equal Remuneration Act, 1976
The code will apply to all employees.

1. The Central Government will take decisions on wages for employments in mines, railways, oil fields, etc.
2. For all other types, the state governments will make the decisions.

- **Wages** include salary, allowance or any other monetary component. It does not include bonuses and travelling allowances.

- **Floor wage:**
  1. As per the code, the Central Government will fix the floor wages considering the workers’ living standards. The floor wage may vary depending on the geographical location.
  2. The minimum wages decided by the central or state governments should be above the floor wages. In case the existing minimum wages are higher than the floor wages, the central or state governments cannot reduce the minimum wages.

- While fixing the minimum wages, the government should take into account the difficulty level of the work, and the workers’ skill levels also.
- Also, the minimum wage fixed will be **reviewed** by the government at least every five years.
- Employers cannot employ people on less than the minimum wage.
- The number of **working hours** will be fixed by the central or state governments. In the case of overtime work, the worker is entitled to overtime compensation which should be at least twice the normal wages.
- The employer can fix the wage period as either daily, weekly, fortnightly, or monthly.
- The employer can deduct wages for the following. However, the deductions should not exceed 50% of the worker’s wages.

1. Fines
2. Absence from duty
3. Accommodation given by the employer
4. Advances given to the employee

- All employees whose wages do not exceed a specific monthly amount will be entitled to an annual bonus.
- The Code prohibits gender discrimination in wages and recruitment of people for the same work or work of similar nature.
- Work of a similar nature is defined as work for which the skill, effort, experience, and responsibility required are the same.

- **Advisory boards**
  1. Advisory boards will be set up by the central and state governments. These
boards will consist of an equal number of employees and employers, state government representatives and independent persons.

2. One-third of the boards will be women members.
3. These boards will advise the governments on minimum wage fixing and increasing the employment opportunities for women.

- The Code specifies penalties for offences committed by an employer.
  1. Contravention of any provision of the Code
  2. Paying less than the minimum wage
  3. The maximum punishment is three-month imprisonment along with a fine of Rs. 1 lakh.

**Industrial Relations Code, 2020**

- The Industrial Employment (Standing Orders) Act, 1946 had made it mandatory for employers of industrial establishments with **100 or more workers** to define the conditions of employment and rules of conduct for workmen, by way of standing orders/services rules and to inform the workers of the same clearly.
- However, under the new Code, the minimum number of workers employed for an establishment to have standing orders has been raised to **300**.
- With the increased threshold, it becomes more flexible and easier to hire and fire thus leading to increased employment according to the government.
- **Prior permission of the government** is mandated before closure, lay-off, or retrenchment of employees in establishments having more than 300 workers.
- The Code also introduces **new conditions** for conducting a legal strike.
- Employees are prohibited from going on strike without giving a 60-day notice.
- Employees are also prohibited from going on strike during the pendency of proceedings before a Tribunal or a National Industrial Tribunal.
- They should also not go on strike before 60 days are completed after the tribunal's proceedings.
- The new Code also proposes the setting up of a re-skilling fund for training retrenched workers with contribution from the employer, of an amount equal to 15 days last drawn by the worker.

**Code on Social Security, 2020**

- The **definition** of employees has been **widened** to include inter-state migrant workers, construction workers, film industry workers and platform workers.
- The gratuity period for working journalists has been reduced from 5 years to 3 years.
- The Code talks about setting up **social security funds** for unorganized
workers, platform workers, and gig workers.

- There is a provision for the central government to decrease or defer the employer’s or employee’s contribution towards the PF or ESI for up to 3 months in the event of a pandemic, national disaster or an epidemic.
- The Code proposes the establishment of a **National Social Security Board** for recommending to the central government the formulation of schemes for the various sections of unorganised, gig and platform workers.

**Code on Occupational Safety, Health and Working Conditions, 2020**

- The Code expands the **definition of a factory** as a premise where at least 20 workers work for a process with power and 40 workers for a process without power.
- The Code **removes the manpower limit** on hazardous working conditions and makes the application of the Code obligatory for contractors recruiting 50 or more workers (earlier it was 20).
- The Code fixes the **daily work hour limit** to a maximum of eight hours.
- The Code empowers **women** to be employed in all kinds of establishments and at night (between 7 PM and 6 AM) subject to their consent and safety.
- To encourage formalisation in employment, the employer is required to issue an **appointment letter**.
- The Code defines an inter-state migrant worker as someone who has come on his/her own from one state and received employment in another state and earns up to Rs.18000 per month.
- **Portability benefits** for inter-state migrant workers: They can avail benefits in the destination state as regards ration and benefits of building and other construction worker cess.
- However, the Code has dropped the earlier provision for temporary accommodation for workers near worksites.
- The Code also proposes a **Journey Allowance** – this is a lump sum fare amount to be paid by the employer for the journey of the worker from his/her native state to the place of employment.
- Many of the provisions of the codes have been termed as anti-worker by trade unions and workers’ organizations. Some experts say that they give more power to the employer especially to hire and fire arbitrarily.

Source: TH
DRDO test fires Agni P missile
GS-II | 07 June,2021

DRDO test fires Agni P missile

- Defence Research and Development Organisation (DRDO) successfully flight tested a New Generation Nuclear Capable Ballistic Missile Agni P from Dr APJ Abdul Kalam island off the coast of Odisha, Balasore at 1055 hrs on June 28, 2021.
- Various telemetry and radar stations positioned along the eastern coast tracked and monitored the missile.
- The missile followed text book trajectory, meeting all mission objectives with high level of accuracy.
- Agni P is a new generation advanced variant of Agni class of missiles.
- It is a canisterised missile with range capability between 1,000 and 2,000 kms.

For Ankit Sir’s Free Lecture on India Year Book Defense Chapter: Click here
For comprehensive notes on Missile development: click here
For comprehensive notes and pdf on defense: click here

Source: PIB
Draft rules for live-streaming and recording court proceedings

- Draft Rules released by the Supreme Court e-Committee for live-streaming and recording court proceedings propose a 10-minute delay in transmission and exclusion of communally sensitive cases and matters that involve sexual offences and gender violence against women.
- The right of access to justice, guaranteed under Article 21 of the Constitution, “encompasses the right to access live court proceedings”.
- The Supreme Court in Swapnil Tripathi v Supreme Court of India (2018) had ruled in favour of opening up the apex court through live-streaming.
- Earlier, the Chief Justice of India (CJI) launched an Artificial Intelligence (AI) based portal ‘SUPACE’ in the judicial system aimed at assisting judges with legal research.
- The Rules are part of the National Policy and Action Plan for implementation of Information and Communication Technology (ICT) in the judiciary.
- Gujarat High Court was the first high court to livestream court proceedings followed by Karnataka high court.

Provisions:

- The Rules would cover live-streaming and recording of proceedings in High Courts, lower courts and tribunals.
- The Rules intend to balance between access to information and concerns of privacy and confidentiality.
- All proceedings in high courts can be telecast except for cases relating to matrimonial disputes, gender-based violence, those involving minors and “cases, which in the opinion of the Bench, may provoke enmity amongst communities likely to result in a breach of law and order”.
- The final decision as to whether or not to allow the Live-streaming of the Proceedings or any portion thereof will be of the Bench, however, the decision of the Bench will be guided by the principle of an open and transparent judicial process. The decision of the Bench shall not be justiciable.
- The rules allow for objections to be filed against live streaming in specific cases at the stage of filing of the case or at a later stage.
- Matrimonial matters, cases under the Protection of Children from Sexual Offences Act (POCSO) and under the Juvenile Justice (Care and Protection of Children) Act would also be exempted from livestream.
- The Bench can exempt, for reasons recorded in writing, any case it considers antithetical to the administration of justice.
- Personal information such as date of birth, home address, identity card number, bank account information, and the personal information of related parties, such as close relatives, witnesses and other participants, will be deleted or muted.
- Discussion amongst judges, notes made by judges during hearings or communication between the advocate and her client will neither be telecast live nor archived.
- The rules also prohibit recording or sharing the telecast on media platforms, including social media and messaging platforms, unless authorised by the court.
- Recordings will not be used for commercial, promotional purposes or advertising in any form.

**e-Courts Project**

- The eCourts Project was conceptualized on the basis of the “National Policy and Action Plan for Implementation of Information and Communication Technology (ICT) in the Indian Judiciary – 2005” submitted by eCommittee, Supreme Court of India with a vision to transform the Indian Judiciary by ICT enablement of Courts.
- Ecommittee is a body constituted by the Government of India in pursuance of a proposal received from Hon’ble the Chief Justice of India to constitute an eCommittee to assist him in formulating a National policy on computerization of Indian Judiciary and advise on technological communication and management related changes.
- The eCourts Mission Mode Project, is a Pan-India Project, monitored and funded by Department of Justice, Ministry of Law and Justice, Government of India for the District Courts across the country.
- The Project envisages

1. To provide efficient & time-bound citizen centric services delivery as detailed in eCourt Project Litigant’s Charter.
2. To develop, install & implement decision support systems in courts.
3. To automate the processes to provide transparency in accessibility of information to its stakeholders.
4. To enhance judicial productivity, both qualitatively & quantitatively, to make
the justice delivery system affordable, accessible, cost effective, predictable, reliable and transparent.

Source: TH

China hosts Foreign Ministers of 10 ASEAN Countries

About ASEAN
ASEAN is a regional grouping that promotes economic, political, and security cooperation. It was established in 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by the founding fathers of ASEAN, namely Indonesia, Malaysia, Philippines, Singapore and Thailand. It consists of ten members namely, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Chairmanship of ASEAN rotates annually, based on the alphabetical order of the English names of Member States. ASEAN countries have a total population of 650 million people and a combined Gross Domestic Product (GDP) of $2.8 trillion. The group has played a central role in Asian economic integration, signing six free-trade agreements with other regional economies and helping spearhead
negotiations for what could be the world’s largest free trade pact.

- **Secretariat** = Jakarta, Indonesia.
- **Formed by** Bangkok declaration. Founders are IMPST (Indo, Mala, Phil, Sing, Thailand).
- **Motto** is 1 Vision, 1 Identity, 1 Community.
- ASEAN is the 3rd largest market and 6th largest economy as a bloc. **ASEAN is India’s 4th largest trading partner (10.6%).**
- **Objectives** = Eco, Social, Cultural, peace and stability, studies.
- **Fundamental Principles** as contained in Treaty of Amity and Cooperation in SEA (TAC) in 1976
  1. Mutual respect for independence, sovereignty, equality, territorial integrity, national Identity.
  2. No external interference.
  3. Non-interference in Internal affairs.
  4. Peaceful settlement of disputes.
  5. Renunciation of threat or use of force.
- **PT Terms**
  1. **ASEAN Summit** = supreme Decision-Making body.
  2. **ASEAN Regional Forum** = 1993. 27 Members. Political and Security issues. **India is a member.**
  3. **ASEAN + 3** = China, Japan and South Korea.
  4. **East Asia Summit** = 2005. Security in the region. ASEAN + China, Japan, South Korea + India, Aus, New Zealand + Russia + USA.
- **Challenges** =
  1. Inequality in countries.
  2. Political systems are different.
  3. South China Sea dispute.
  5. China dominance coz of ethnic similarities.
  6. Incompetent Dispute Redressal Mechanism.
  7. RCEP not working properly.
- **India and ASEAN: Summit in Thailand** =
  1. Promote India - ASEAN Strategic Partnership in maritime security, blue economy, trade, investment, S&T and innovation. Even on the socio cultural front (people to people, cultural exchanges, tourism).
  3. **ASEAN outlook for Indo-Pacific**
    1. It reinforces ASEAN centered regional architecture, not aimed at creating new mechanisms or replace the existing ones, rather, intended to enhance ASEAN’s Community building process and to strengthen and give new momentum for existing ASEAN-led mechanisms.
    2. It involves the further strengthening and optimization of ASEAN-led mechanisms, including EAS and ARF.
    3. It enumerates 4 functional areas: Maritime cooperation,
Regional Comprehensive Economic Partnership (RCEP):

- It is a proposed FTA between 10 ASEAN countries (Myanmar, Thailand, Malaysia, Laos, Cambodia, Vietnam, Brunei, Indonesia, Philippines and Singapore) and its 6 FTA partners = Japan, South Korea, China + India, Australia, New Zealand. Now India has opted out of RCEP.
- There are 2 Observer countries = USA + Russia.
- They constitute a little less than 50% of World’s population, 1/3rd of Global GDP and > 25% of Global trade. Talks began in 2012 in 21st ASEAN summit in Cambodia deal by 2020.
- Transatlantic Trade and Investment Partnership (TTIP) is a trade agreement between EU and USA.
- Bangkok, Thailand RCEP meet is also known as East Asia Summit.

India’s Demands

2. Import surge from China through Auto trigger mechanism.
3. Stricter rules of origin to prevent dumping from China.

Implications = Can check China dumping. Protect domestic indus. China influence in RCEP. Reduced opportunities of trading for manuf. Affect AEP.

India’s issues with RCEP

- India has Trade Deficit with 11 out of 15 RCEP countries and 53 billion $ with China. If India joined RCEP this Trade Deficit with increase.
- Data Localization norms (RBI is the agency in India) is an issue. China’s access to Indian markets, Automatic Trigger mechanism and Rules of origin. Automobile Industry, Environment and Labour Laws are other issues. Dairy sector vis a vis Australia and New Zealand is also an issue.
- Non acceptance of Auto Trigger mechanism which would have allowed India to raise tariffs on products in instances where imports > threshold.
- Protect domestic dairy (from Aus, NZ) and Steel Indus (China).
- Lack of consensus on Rules of origin (which was the criteria used to determine the National source of a product).
- Export Sophistication i.e. production of sophisticated tradable goods is a determinant in late developing and industrializing economies.
- If India agreed e-commerce chapter of RCEP, it will prevent India from implementing data localization rules on Companies doing business in India. India rejected it. RBI is the agency which deals with data localisation...
guidelines in India. It issued a 2018 April notification that “all system providers shall ensure that the entire data relating to payments operated by them are stored in a system only in India”.

- **China’s access to Indian markets.** Cheap imports from China is impacting India’s domestic industry and India has imposed a safeguard duty on solar panel imports and anti-dumping measures on items like steel. Dumping of Chinese goods.
- **India has agreed to investment chapter** which means government cannot mandate that a company investing in India must also transfer technology and knowhow to its Indian partners. It also says that one cannot set a cap on the amount of royalties an Indian company can pay to its foreign partner or parent.
- **Economists argue that multilateral organizations like RCEP are “welfare enhancing” for India.**
- **Automobile Industry, Environment and Labour Laws.**
- **India requested changing base rate of customs duty from 2014 to 2019.** It will be signed by 2022 which will make the 2014 base rate outdated.
- **MFN issue: Exclusion of MFN obligations (given by strategic interests) was sought in investment chapter**
- **India is not a member of APEC (Asia Pacific Economic Cooperation); Chiang Mai initiative (China, Japan, East Asian countries and includes currency swap agreements); CP-TPP (Comprehensive and Progressive Trans-Pacific Partnership).**
- **India is only marginally attached to the region by economic partnership agreements with Japan, South Korea and ASEAN.**

**China hosts Foreign Ministers of 10 ASEAN Countries**

- China is hosting Foreign Ministers from the 10 ASEAN countries, with Beijing pushing for closer economic cooperation and aligning COVID-19 recovery efforts even as it looks to push back against the recent regional outreach of the Quad grouping.
- Chinese officials have in recent weeks stepped up criticism of the Quad — the informal India, Australia, Japan and the United States grouping — and of Washington in particular.
- During recent visits to Sri Lanka and Bangladesh, China’s Defence Minister called on both countries to reject “military alliances” — a term that some Beijing are using to describe the Quad, but a label that the group rejects.
- China’s Foreign Ministry spokesperson Wang Wenbin said in a statement the China-ASEAN Foreign Ministers meeting, in the city of Chongqing,
would mark the 30-year anniversary of relations and also “focus on combating COVID-19, promoting economic recovery, [and] better dovetail[ing] strategic plans.” A vaccine passport connecting China and ASEAN countries is also being discussed.

- China’s Foreign Minister Wang Yi will hold bilateral meetings with all the visiting Ministers, and also chair a meeting of the Lancang-Mekong Cooperation (LMC) with Cambodia, Laos, Myanmar, Thailand and Vietnam.

**Economic cooperation**

- Deepening economic cooperation, particularly following the signing of the Regional Comprehensive Economic Partnership (RCEP) trade deal, would be China’s focus, analysts in Beijing said, even as it grapples with disputes over the South China Sea.
- Recently, China and the Philippines have clashed over the presence of Chinese vessels near a disputed reef, while Malaysia alleged the intrusion of 16 Chinese aircraft into its airspace.
- The Communist Party-run Global Times on Monday blamed the U.S. for those tensions rather than China’s moves that prompted the protests from the Philippines and Malaysia.
- Countries “see clearly that quarrels on South China Sea are not the biggest threat to regional stability; it is the U.S., whose warships frequently sail through the sensitive waters and try to force ASEAN countries take sides to confront China,” the newspaper wrote.
- After the first Quad leaders’ summit held in March and the announcement of a regional vaccine initiative, many Chinese analysts framed ASEAN as a key space where Chinese and Quad initiatives may rub up against each other.
- The framing of the Quad as “an Asian NATO” by Beijing has been criticised by the group’s members. India’s External Affairs Minister S. Jaishankar in April described the using of words such as “Asian NATO” as “a mind game which people are playing”.

Source: TH

Maldives Foreign Minister Abdulla Shahid is the President of
Maldives Foreign Minister Abdulla Shahid is the President of UNGA for 2021-22

- In a first for the Maldives, Foreign Minister Abdulla Shahid was elected the President of the UN General Assembly for 2021-22, winning 143 votes or nearly three-fourths of the 191 countries that voted in the annual election, while his rival, former Afghanistan Foreign Minister Zalmai Rassoul, won 48.
- Mr. Shahid's win was welcomed in particular in New Delhi, where Indian diplomats had been active behind the scenes in helping the Maldives canvass for him, after Maldives announced its candidate for the 76th General Assembly Presidency a year ago.
- Sources confirmed that given the close cooperation between both countries, Maldives is in discussions with the Indian mission for India's deputy Permanent Representative at the UN Nagaraj Naidu to officiate as Mr. Shahid’s Chef de Cabinet.
- Maldives President Ibrahim Solih called the election win “resounding” and a “great honour for the Maldives”, while former President and Maldives speaker Mohammad Nasheed said it was a “great day” for small island states and for “climate vulnerable countries everywhere”.
- India had made it clear to Afghanistan’s government that it would be unable to support Mr. Rassoul as it had declared its support for Maldives publicly in November, long before Afghanistan announced its candidature in January this year.
- The announcement had caused an awkward tussle within the Asia Pacific group, whose turn it is to take the Presidency of the General Assembly, and especially for India, which has close ties with both countries.
- Both Maldives and Afghanistan have excellent ties with India and both candidates are friends of India. However, since India had already committed its support to Maldives at a time when no other candidate was in the fray, India voted in favour of Maldives.

About United Nations General Assembly (UNGA)

- The General Assembly is the main deliberative, policymaking and representative organ of the UN.
All 193 Member States of the UN are represented in the General Assembly, making it the only UN body with universal representation.

The President of the General Assembly is elected each year by assembly to serve a one-year term of office.

The presidency rotates annually between the five geographic groups: African, Asia-Pacific, Eastern European, Latin American and Caribbean, and Western European and other States.

Decisions on important questions, such as those on peace and security, admission of new members and budgetary matters, require a two-thirds majority of the General Assembly.

Decisions on other questions are by simple majority.

The Assembly has no binding votes or veto powers like the UN Security Council.

According to the Charter of the United Nations, the General Assembly may:

- Consider and approve the United Nations budget and establish the financial assessments of Member States.
- Elect the non-permanent members of the Security Council and the members of other United Nations councils and organs and, on the recommendation of the Security Council, appoint the Secretary-General.
- Consider and make recommendations on the general principles of cooperation for maintaining international peace and security, including disarmament.
- Discuss any question relating to international peace and security and, except where a dispute or situation is currently being discussed by the Security Council, make recommendations on it.

Source: TH
Raksha Mantri Shri Rajnath Singh released an E-booklet titled ‘20 Reforms in 2020’, highlighting the major reforms undertaken by Ministry of Defence (MoD) in 2020.

The compilation provides a brief overview of defence reforms undertaken in the year 2020 by MoD to bring about greater cohesion and modernisation of the Armed Forces through policy changes, innovation and digital transformation.

Reforms also focused on the ‘AatmaNirbhar Bharat’ initiative of Prime Minister Shri Narendra Modi;
1. increased collaboration with the industry to boost defence exports;
2. measures to accelerate defence acquisitions with greater transparency;
3. digital transformation;
4. strengthening of border infrastructure;
5. increased participation of women in Armed Forces;
6. transformation in R&D to boost innovation;
7. expansion of NCC to remote locations and
8. aid extended to the civil administration in fight against COVID-19.

Reforms in the Defense sector

1) Chief of Defence Staff & Department of Military Affairs

- The appointment of India’s first Chief of Defence Staff (CDS) and creation of Department of Military Affairs (DMA) were among the major decisions taken by the Government.
- The post of CDS was created to increase efficiency & coordination among the Armed Forces and reduce duplication, while DMA was established to ensure improved civil-military integration.
- General Bipin Rawat was appointed as the first CDS who also fulfils the responsibilities of Secretary, DMA.

2) Aatma Nirbarta in Defence

- To promote ‘Make in India’ in defence sector, a list of 101 defence items was notified in August 2020, while Defence Acquisition Procedure 2020 was unveiled in September 2020.
- Rs 52,000 crore budget was earmarked for indigenously made defence equipment in 2020-21.
- Corporatisation of Ordnance Factory Board (OFB) was approved in May 2020 for greater efficiency and productivity. There was an unprecedented push towards new technology developments within India.
- Bharat Electronics Limited (BEL) developed a ventilator in record time to meet Covid-19 requirements in May 2020.
In November 2020, Quick Reaction Surface to Air Missile, indigenously designed & developed DRDO, hit bullseye at medium range and medium height, while indigenously built Pinaka rocket system cleared test of 45-60 km range.

3) Increased Defence Exports

- The increased partnership with the private sector has led to a substantial rise in defence exports.
- The value of total defence exports rose from Rs 1,941 crore in 2014-15 to Rs 9,116 crore in 2019-20.
- Also, for the first time, India figured in the list of defence equipment exporting nations, as the exports expanded to more than 84 countries.

4) Modernisation & increased transparency in Defence Acquisition

- In highest-ever thrust towards modernisation in last 10 years, there was 10 per cent budget increase in 2020-21 over the previous year.
- To encourage start-ups, a provision was introduced for procurement as Buy Indian-IDDM, while leasing for non-mission critical requirements was introduced for the first time.

5) Defence Acquisitions

- First five Rafale fighter aircraft arrived in India in July 2020 and several more since then, adding firepower to the arsenal of the Indian Air Force. Despite the COVID-19 challenge, the aircraft were delivered timely and inducted into IAF.

6) Reforming Defence R&D

- To promote innovation by young minds, five Young Scientists Laboratories of DRDO were launched in 2020 in Bengaluru, Mumbai, Chennai, Kolkata and Hyderabad.
- DRDO has joined hands with the private sector in design & development and identified 108 Systems & Subsystems for the industry to design, develop and manufacture.

7) Digital Transformation
For the first time, several organisations of Ministry of Defence went digital. Directorate General Quality Assurance (DGQA) started online Pre-Delivery inspection in May 2020 to address security threats, while Armed Forces Tribunal began digital hearing for the first time in August 2020. Defence Estates, Canteen Stores Department, services in Cantonment, MoD Pension and National Cadet Corps (NCC) also went online providing faster and transparent services.

8) Strengthening border infrastructure

- Reforms of processes and workflows within Border Roads Organisation (BRO) enabled it to achieve targets ahead of schedule, in some instances.
- World’s longest Atal tunnel above 10,000 feet, at Rohtang on the Leh-Manali Highway was inaugurated by Prime Minister Shri Narendra Modi in October 2020.
- It provides all weather connectivity to the northern borders.
- Zojila pass, situated on the Srinagar-Kargil-Leh National Highway, was opened almost a month ahead of schedule in April 2020.

9) Stree Shakti in Armed Forces

- In 2020, Ministry of Defence took some historic decisions to increase participation of women in the Armed Forces.
- Ten streams of Indian Army were opened for giving Permanent Commission to Short Service Commission (SSC) Women officers, while women pilots of Indian Navy were operationalised for the first time.
- All Sainik Schools were thrown open for girl students from academic session 2020-21.

10) Reforms in NCC

- Expanding the reach of NCC to remote locations was a major announcement made by Prime Minister Shri Narendra Modi from the ramparts of Red Fort on Independence Day on August 15, 2020.
- More than 1,075 schools/colleges in border and coastal areas were identified and the enrolment began in November 2020.
- In another decision, it was decided to give preference to NCC cadets in employment in Central Armed Police Forces from May 2020.
- Youth Exchange Programme Allowance for NCC cadets was increased from Rs 100 per day to Rs 750 and the number of countries was increased from 10 to 15.

11) Aid to civil administration during COVID-19
Ministry of Defence and the Armed Forces have mobilised resources to aid the civil administration in fight against COVID-19. Armed Forces Medical Services (AFMS) provided all emergency support to tide over the situation. They have mobilised doctors, health professionals and set up Quarantine facilities at several locations across the country. DRDO has set up several hospitals to treat COVID patients across the states, passed on technology expertise to manufacture ventilators, oxygen plants, medicines, test kits and PPE kits to private sector for mass production.

12) Help beyond boundaries

The Armed Forces extended a helping hand to the countries in distress. Indian Navy mounted eight relief missions during 2020-21. Besides evacuating stranded Indians from Iran, Sri Lanka and Maldives under Vande Bharat Mission, Indian Naval ships provided Covid-19 medical relief, including medicines and doctors, to five countries. INS Airavat provided 270 MT food aid to Sudan, Djibouti and Eritrea struck by natural calamities. The Indian Coast Guard led the rescue operation to save Sri Lanka coast of its biggest oil spill. Indian Air Force carried out over 800 relief missions during 2020-21.

Source: PIB

Swachh Bharat Mission Grameen â€“ Phase 2

Swachh Bharat Mission Grameen – Phase 2

About Swachh Bharat Mission (SBM)

- SBM (1st phase) was a nation-wide campaign in India for the period 2014 to 2019 that aims to clean up the street, roads and infrastructure of cities towns, urban and rural cities and area in India.
- The objectives of Swachh Bharat include eliminating open defecation through the construction of household-owned and community-owned toilets and
establishing an accountable mechanism of monitoring toilet use.

- Run by the Government of India, the mission aims to achieve an "open-defecation free" (ODF) India by 2 October 2019, the 150th birth anniversary of Mahatma Gandhi, by constructing 100 million toilets in rural India at a projected cost of Rs.1.96 lakh crore (US$28 billion).
- The mission will also contribute to India reaching Sustainable Development Goal 6 (SDG 6), established by the UN in 2015.
- The campaign was officially launched on 2 October 2014 at Rajghat, New Delhi by PM Modi. It is India’s largest cleanliness drive to date with three million government employees and students from all parts of India participating in 4,043 cities, towns, and rural communities. PM Modi has called the campaign Satyagrah se Swachhagrah in reference to Gandhi’s Champaran Satyagraha launched on 10 April 1916.
- The mission has two thrusts:
  1. Swachh Bharat Abhiyan ("gramin" or "rural"), which operates under the Ministry of Jal Shakti; and
  2. Swachh Bharat Abhiyan ("urban"), which operates under the Ministry of Housing and Urban Affairs.

**Phase one**

- The rural sanitation programme was started on October 2, 2014, when the sanitation coverage in the country was reported at 38.7 per cent. More than 10 crore individual toilets have been constructed since the launch of the mission and as a result, rural areas in all states have declared themselves open defecation free (ODF) as on October 2, 2019.

**Implementation of second phase**

- The second phase will be implemented on a mission mode between 2020-21 and 2024-25 with an estimated central and state budget of Rs 52.497 crore.
- The second phase will focus on Open Defecation Free Plus (ODF Plus), which includes ODF sustainability and solid and liquid waste management (SLWM).
- The ODF Plus programme will converge with MGNREGA, especially for grey water management, and will complement the newly launched Jal Jeevan Mission.
- The programme will also work towards ensuring that no one is left behind and everyone uses a toilet.
- The 15th Finance Commission has proposed earmarking Rs 30,375 crores for rural water supply and sanitation to be implemented by rural local bodies.
for the upcoming financial year.
- The Department of Drinking Water and Sanitation (DDWS) under the Ministry of Jal Shakti has, however, advised all the states to reconfirm that there are no rural households that still don't have access to a toilet.
- The department has also said that to provide the necessary support to any such identified households to build individual household toilets in order to ensure that no one is left behind under the programme.
- The fund sharing pattern between the Centre and States will be 1. 90:10 for North-Eastern States and Himalayan States and UT of J&K 2. 60:40 for other States; and 3. 100:0 for other Union Territories, for all the components.
- The Jal Shakti ministry said the Swachh Bharat Mission-Grameen continue to generate employment and provide impetus to the rural economy through construction of household toilets and community toilets, as well as infrastructure for waste management such as compost pits, soak pits, waste stabilisation ponds, material recovery facilities, etc.

As part of the campaign, volunteers, known as Swachhagrahis, or "Ambassadors of cleanliness", have promoted indoor plumbing and community approaches to sanitation (CAS) at the village level. Other non-governmental activities include national real-time monitoring and updates from non-governmental organizations (NGOs) such as The Ugly Indian, Waste Warriors, and SWaCH Pune (Solid Waste Collection and Handling) that are working towards its ideas of Swachh Bharat.

The government has constructed 11 million toilets since 2014. Many people continue to not use toilets despite having them. The campaign has been criticized for using coercive approaches to force people to use toilets. Many households have been threatened with a loss of benefits such as access to electricity or food entitlements through the public distribution system. However, a report by UNICEF shows promising improvements with sanitation coverage reaching 90 percent.

Source: PIB

Accurate estimation of Black Carbon over Himalaya
GS-III | 08 June, 2021
Accurate estimation of Black Carbon over Himalaya

- Accurate estimation of black carbon (BC), the second most important global warming pollutant after CO2, will now be possible using optical instruments in the Himalayan region.
- Thanks to a parameter called the mass absorption cross-section (MAC) specific to the Himalayan region that scientists have estimated. It will also improve the performance of numerical weather prediction and climate models.
- Scientists at the Aryabhatta Research Institute of Observational Sciences (ARIES), an autonomous institute under the Department of Science & Technology (DST), Govt. of India, in collaboration with scientists from the University of Delhi, IIT Kanpur and Space Physics Laboratory, ISRO have made extensive observations of black carbon and elemental carbon and estimated monthly and wavelength-dependent values of MAC over the central Himalayan region for the first time.
- The researchers have derived the values of MAC – an essential parameter which is used for obtaining Black Carbon mass concentrations.

About Black Carbon

- Black Carbon (BC) – It is a Pollutant as well as a GHG. It is a solid particle or aerosol & a component of Particulate Matter.
- Black carbon consists of pure carbon in several linked forms.
- It is formed through the incomplete combustion of fossil fuels, biofuel, and biomass (like soot & dust), and is emitted in both anthropogenic and naturally occurring soot.

- It is short lived. It is the strongest absorber of sunlight and heats the atmosphere directly. It can upset the monsoon system and disrupt cloudiness.
- Black Carbon Study by Wadia Institute of Himalayan Geology (WIHG), Dehradun: It is not the local sources that are the reason for pollution and receding snowline of the Himalayas but the reason is Black Carbon (Because of Western disturbances). If deposited on snow, it reduces the albedo and accelerates the heating of snow and quicken the melting of glaciers.

Health Impacts
Black carbon (BC) is a pollutant known to aggravate breathing disorders. According to a recent study published, BC particles emitted by the vehicular exhaust and coal-fired power plants, have been detected on the fetus-facing side of the placenta. This is expected to affect the overall development of the unborn baby.

Other terminologies

- **Brown Carbon**: It is the ubiquitous & unidentified component of organic aerosol. Major source is biomass burning (wood). It is a GHG.
- **Blue Carbon**: It is the carbon stored & sequestered in coastal ecosystem like Mangrove forests, seagrass meadows or intertidal marshes.

What is the news?

- World Bank released a report on Black Carbon titled “Glaciers of the Himalayas, Climate Change, Black Carbon and Regional Resilience”.
- Black carbon (BC) deposits produced by human activity which accelerate the pace of glacier and snow melt in the Himalayan region can be sharply reduced through new, currently feasible policies by an additional 50% from current levels, a study by World Bank (WB) specialists has said.
- The research covers the Himalaya, Karakoram and Hindu Kush (HKHK) mountain ranges, where, the report says, glaciers are melting faster than the global average ice mass.
- The rate of retreat of HKHK glaciers is estimated to be 0.3 metres per year in the west to 1.0 metre per year in the east. BC adds to the impact of climate change.
- Full implementation of current policies to mitigate BC can achieve a 23% reduction but enacting new policies and incorporating them through regional cooperation among countries can achieve enhanced benefits, the WB said in the report titled “Glaciers of the Himalayas, Climate Change, Black Carbon and Regional Resilience”.
- BC is a short-lived pollutant that is the second-largest contributor to warming the planet behind carbon dioxide (CO2). Unlike other greenhouse gas emissions, BC is quickly washed out and can be eliminated from the atmosphere if emissions stop.
- Unlike historical carbon emissions, it is also a localised source with greater local impact.
- Some of the ongoing policy measures to cut BC emissions are
1. Enhancing fuel efficiency standards for vehicles,
2. Phasing out diesel vehicles and promoting electric vehicles,
3. Accelerating the use of liquefied petroleum gas for cooking and through clean cookstove programmes, as well as
4. Upgrading brick kiln technologies.

However, with all existing measures, water from glacier melt is still projected to increase in absolute volume by 2040, with impacts on downstream activities and communities.

- **Glacier melt produces flash floods, landslips, soil erosion, and glacial lake outburst floods.**
- Deposits of BC act in two ways hastening the pace of glacier melt:
  1. By decreasing surface reflectance of sunlight and
  2. By raising air temperature, the researchers point out.
- Specifically, in the Himalayas, reducing black carbon emissions from cookstoves, diesel engines, and open burning would have the greatest impact and could significantly reduce radiative forcing and help to maintain a greater portion of Himalayan glacier systems. More detailed modelling at a higher spatial resolution is needed to expand on the work already completed.
- Industry [primarily brick kilns] and residential burning of solid fuel together account for 45–66% of regional anthropogenic [man-made] BC deposition, followed by on-road diesel fuels (7–18%) and open burning (less than 3% in all seasons)” in the region.

Source: PIB
PRAGYATA': Guidelines on Digital Education

Union HRD Ministry released ‘PRAGYATA’: Guidelines on #DigitalEducation for school heads, teachers, parents, and students. The guidelines are based on four guiding principles, stipulating that all resources must be perceivable, operable, understandable and robust for disabled students.

Provisions:

- The ministry has recommended a cap on the screen time for students.
- As per the guidelines, online classes for pre-primary students should not be for more than 30 minutes.
- It further mentions that two online sessions of up to 30-45 minutes each should be conducted for classes 1 to 8 and four sessions for classes 9 to 12.
- The PRAGYATA guidelines include eight steps of online education that is, Plan, Review, Arrange, Guide, Yak(talk), Assign, Track, and Appreciate.

The guidelines outline suggestions for administrators, school heads, teachers, parents, and students in the following areas:

- Need assessment
- Concerns while planning online and digital education like duration, screen time, inclusiveness, balanced online and offline activities, etc level-wise
- Modalities of intervention including resource curation, level-wise delivery, etc.
- Physical, mental health, and wellbeing during digital education
- Cyber safety and ethical practices including precautions and measures for maintaining cyber safety
- Collaboration and convergence with various initiatives: To mitigate the impact of the pandemic, schools will not only have to remodel and re-imagine the way teaching and learning have happened so far, but will also need to introduce a suitable method of delivering quality education through a healthy mix of schooling at home and schooling at school.
- They recommend that all textbooks be made digitally accessible in a phased manner, so that they are available in multiple formats such as text, audio, video and sign language with turn-on and turn-off features. Detailed technical standards have been provided.
- The closure of regular schools and learning centres due to COVID-19 has led to special difficulties for many disabled children.
For instance, a recent study by the Vidhi Centre for Legal Policy showed that more than half of the NCERT textbooks available on the government’s virtual education platform DIKSHA were not accessible for visually impaired students.

- The guidelines provide strategies to produce supplementary content for varying disabilities, including students who face visual and hearing challenges, those on the autism spectrum, those with intellectual or special learning disabilities, and those with multiple disabilities.
- They note that learning activities must include audio, visual and tactile experiences, while evaluation must be multimodal.
- Ironically enough, while the guidelines call for the use of image descriptions wherever pictures are used in order to be accessible to visually challenged students using screen readers, this is not even followed by the guidelines document itself, according to Muralidharan, secretary, National Platform for the Rights of the Disabled.

Way Forward

The guidelines do include an implementation roadmap. The next steps are the nomination of an expert technical team to update the DIKSHA platform, followed by training and development of prototypes of the accessible digital textbooks.

Source: TH

Scheduled Areas and Tribal areas: Rengma Nagas demand autonomous district council

Difference between 5th Schedule (Scheduled areas) and 6th Schedule (Tribal areas)

This topic has been explained in the easiest format by Ankit Sir with Mains
5th SCHEDULE – Art 244 (1) – Part 10

- It deals with the administration and control of Scheduled Areas and Scheduled Tribes of any states except Assam, Meghalaya, Mizoram and Tripura.
Missing governors’ reports

Available records show that governors in the nine states with Schedule Five areas have till date sent 66 reports (break-up in the map) to the President. In the past 22 years the states should have sent 189 reports.

Source: Commonwealth Human Rights Initiative and Samata NGO
“Scheduled Areas (SA)” means such areas as the President may by order declare to be the Scheduled Areas. They have been given autonomy in marriage, law, property, transfer, inheritance etc. They are treated different because of the socio-economic backwardness and special efforts need to be made to improve their condition. 10 States have Scheduled Areas: Andhra Pradesh, Telangana, Jharkhand, Chattisgarh, Gujarat, Himachal P, Madhya P, Maharashtra, Odisha and Rajasthan.

Features:

- **Declaration of Scheduled Areas**: President has the authority to declare a Schedule area, alter, increase or decrease the boundaries after the consultation with the Governor of that State.
- **Executive Power of States and Centre**:
  1. **States administer SAs**: The executive power of Center extends to giving directions to the States with respect to administration of such areas.
  2. **Governor has a special responsibility**, he has to submit report to President with respect to administration of such areas annually or whenever required by President & Centre gives directions to States.
- **Tribes Advisory Council**:
  1. Each State having SAs has to established a **Tribes Advisory Council (TAC)** to advice on welfare & advancement of STs.
  2. It consists of 20 members, 3/4th of whom are to be representatives of ST in STATE LEGISLATIVE ASSEMBLY.
  3. A similar council can also be established in States having STs but not SAs therein, if the President so directs.
  4. If the no. of representatives of STs in STATE LEGISLATIVE ASSEMBLY < no. of seats in TAC to be filled by such representatives, then the remaining seats shall be filled by members of those tribes. Governor may make rules on appointment of Ch. Members etc.
- **Law Applicable to SAs**:
  1. **Governor is empowered to direct** that any particular Act of Parliament or State Legislature doesn’t apply to a SAs or apply with specified modifications and exceptions.
  2. He can also make regulations for peace and good governance of SAs after consulting TAC. Such regulations may prohibit or restrict transfer of land, regulate the allotment of land and business of money.
The Constitution requires President to appoint a commission to report on the administration of SAs and the welfare of STs in the States. UN Dhebar committee was appointed in 1961. 2nd Commission was appointed in 2002 under Dilip Singh Bhuria.

PESA is applicable to 5th Schedule areas.

The Provisions of the Panchayats (Extension to the Schedule Areas) Act 1996 (PESA)

- It safeguards and preserves the traditions and customs of the people, and their cultural identity, community resources, customary mode of dispute resolution.
- PESA empowers Gram Sabha/Panchayat at appropriate level with right to mandatory consultation in land acquisition, resettlement and rehabilitation of displaced persons.
- PESA seeks to reduce alienation in tribal areas as they will have better control over the utilisation of public resources.
- The act recognize and established the forestablished rights in FDST and OTFD (Forestablished Dwelling Scheduled Tribes and Other Traditional Forestablished Dwellers) who have been residing in such forestablished for generations.
- The act identify four types of rights:
  1. **Title rights**: It gives FDST and OTFD the right to ownership to land farmed by tribals or forestablished dwellers subject to a maximum of 4 hectares. Ownership is only for land that is actually being cultivated by the concerned family and no new lands will be granted.
  2. **Use rights**: The rights of the dwellers extend to extracting Minor Forestablished Produce, grazing areas, to pastoralist routes, etc.
  3. **Relief and development rights**: To rehabilitation in case of illegal eviction or forced displacement and to basic amenities, subject to restablishedrictions for forestablished protection.
  4. **Forestablished management rights**: It includes the right...
to protect, regenerate or conserve or manage any community forestablished resource which they have been traditionally protecting and conserving for sustainable use.

- **Who can claim these Rights?**
  1. ST who primarily reside in and who depend on the forestablished or forestablished lands.
  2. It can also be claimed by any member or community who has for **at least 3 generations** (75 years) prior to the 13 December, 2005 primarily resided in forestablished lands.
  3. The **Gram Sabha** is the authority to **initiate the process** for determining the nature and extent of **Individual Forestablished Rights (IFR)** or **Community Forestablished Rights (CFR)** or both that may be given to FDST and OTFD.

6th SCHEDULE: Tribal Areas - Art 244 (2)

It deals with the administration of Tribal Areas in 4 North-eastern States of Assam, Meghalaya, Tripura and Mizoram (AMTM).

- **Rationality**: Tribes in AMTM have not assimilated much with the majority and still have their roots in their own culture, customs etc.
- **The tribal areas of AMTM** are considered as **Autonomous Districts**: But they do not fall outside the executive authority of the state concerned.

1. Assam – Karbi Anglong, 2 Kachari, Bodoland, Dima Hasao, Rabha Hasong, Mishing, Tiwa, Deori
2. Meghalaya – Garo, Khasi, Jaintia,
3. Tripura: Hill dist,
Governor has the authority to re-organize these, increase or decrease the boundaries, delimitation of areas, elections, qualifications, term of office etc.
If there are different tribes in an autonomous district, the Governor can divide the district into several autonomous regions.
Each autonomous district has a District Council of 30 members – 26 elected on the UAF, 4 nominated by Governor. Elected members hold office for 5 years and nominated members hold office during the pleasure of Governor.
Each autonomous region also has a separate Regional council for each area constituted as an autonomous area under this schedule.
District and Regional Councils have some legislative + judicial functions with the assent of President.

These Powers are

- Allotment / Setting Apart of Land for Agri, residential, grazing, non-agricultural purposes. Management of forests not being a Reserved forest.
- Use of Canal, Regulation of Jhum, Inheritance of Property, Marriage, Social Customs, Headman, Village Committees. Construct schools, regulation of money lending and trading by non-tribals.
- BUT, Governor’s assent is required. (Autonomous State can be
formed only within Assam)

- They can collect and impose tax, Land Revenue constitute Village councils / Court for trial. They hear appeals from them. The jurisdiction of HC is specified by Governor.

- Acts of Parliament or State legislature do not apply to autonomous district or apply with certain modifications.
- The power of discretion lies either with President or Governor.

1. In case of Assam, it lies w Governor both with respect to Parliament and State legislature.
2. In case of MTM, it lies with President with respect to Parliamentary Acts and Governor with respect to State Legislature Acts.

- **Governor can appoint a commission to enquire into their status.** He may dissolve a district on the recommendation of Commission.
- **Art 275:** Grant in Aids are applicable to 6th Schedule areas.

Cabinet approves amendment in Sixth Schedule to strengthen 10 North East autonomous councils

- The cabinet approves landmark amendment to Article 280 and Sixth Schedule of the Constitution to increase the powers of the autonomous councils in the Sixth Schedule areas of the North East.
- The **Finance Commission** will be mandated to recommend **devolution of financial resources to them.**
- The amendment also provides for **transfer of additional 30 subjects** including departments of Public Works, Forests, Public Health Engineering, Health and Family Welfare, Urban Development and Food and Civil Supply to Karbi Anglong Autonomous Territorial Council and Dima Hasao Autonomous Territorial Council in Assam.
- The most important part of these amendments is that these will significantly improve the financial resources and powers of the autonomous districts councils in Assam, Meghalaya, Mizoram and Tripura, fulfilling longstanding aspirations of the tribal population in
these northeastern states.

- The proposed amendments provide for **elected village municipal councils**, ensuring democracy at the grassroots level.
- The village councils will be empowered to prepare plans for economic development and social justice including those related to agriculture, land improvement, implementation of land reforms, minor irrigation, water management, animal husbandry, rural electrification, small scale industries and social forestry.
- **At least one-third of the seats will be reserved for women in the village and municipal councils** in the Sixth Schedule areas of Assam, Mizoram and Tripura and **at least two of the nominated members** in all autonomous councils in the North East Sixth Schedule areas resulting in empowerment of women.
- There will be **State Election Commissions for holding elections to the autonomous councils, village and municipal councils** in the areas of Assam, Mizoram and Tripura.
- There will be a **provision for anti-defection too**.
- **Meghalaya has for the time being kept out of the purview of the provision for elected village and municipal councils and one-third reservations for women.**
- The amendments propose to rename the existing autonomous councils as
  1. Karbi Anglong Autonomous Territorial Council (KAATC),
  2. Dima Hasao Autonomous Territorial Council (DHATC),
  3. Garo Hills Autonomous Territorial Council (GHATC),
  4. Khasi Hills Autonomous Territorial Council (KHATC),
  5. Jaintia Hills Autonomous Territorial Council (JHATC) and
  6. Tripura Tribal Area Autonomous Territorial Council (TTAATC) as the present jurisdiction of these councils extend to more than one districts.
- There will also be increase in seats in KAATC (from 30 to 50 seats), DHATC (30 to 40 seats), GHATC (30 to 42), KHATC (30 to 40) and JHATC (30 to 34).

---

**What is the news?**

- The Rengma Nagas in Assam have written to Union Home Minister Amit Shah demanding an **autonomous district council** amid a decision by the
Central and the State governments to upgrade the Karbi Anglong Autonomous Council (KAAC) into a territorial council.

- The KAAC population is around 12 lakh and the Karbis constitute only 3 lakh, the remaining are non-Karbis, including the Rengma Nagas, whose population is around 22,000.
- The Rengma Naga Peoples’ Council (RNPC), a registered body, said in the memorandum that the Rengmas were the first tribal people in Assam to have encountered the British in 1839, but the existing Rengma Hills was eliminated from the political map of the State and replaced with that of Mikir Hills (now Karbi Anglong) in 1951.
- Narrating its history, the council said that during the Burmese invasions of Assam in 1816 and 1819, it was the Rengmas who gave shelter to the Ahom refugees.
- The petition said that the Rengma Hills was partitioned in 1963 between Assam and Nagaland at the time of creation of Nagaland State and the Karbis, who were known as Mikirs till 1976, were the indigenous tribal people of Mikir Hills.
- Thus, the Rengma Hills and Mikir Hills were two separate entities till 1951. Karbis have no history in the Rengma Hills. People who are presently living in Rengma Hills are from Assam, Arunachal Pradesh and Meghalaya. They speak different dialects and do not know Karbi language of Karbi Anglong.
- The National Socialist Council of Nagaland or NSCN (Isak-Muivah), which is in talks with the Centre for a peace deal, said in a statement that the Rengma issue was one of the important agendas of the “Indo-Naga political talks” and no authority should go far enough to override their interests.
- More than 3,000 Rengma Nagas were forced to relocate to relief camps in 2013 after several people were killed in a series of attacks following a call given by a Karbi insurgent group.

For news on Naga Peace Accord: Click here

Source: TH

Illegal adoption in COVID

GS-I | 09 June, 2021
Illegal adoption in COVID

- The Supreme Court has directed the States and the Union Territories to take stringent action against private individuals and NGOs who invite people to illegally adopt children orphaned by the COVID-19 pandemic.
- A Bench of Justices L. Nageswara Rao and Aniruddha Bose, in an 18-page order published, directed the government to step in and prevent private entities from revealing the identities of affected children, usually on social media, and inviting people to adopt them.
- The State Governments/Union Territories are directed to prevent any NGO from collecting funds in the names of the affected children by disclosing their identity and inviting interested persons to adopt them. No adoption of affected children should be permitted contrary to the provisions of the Juvenile Justice Act, 2015.
- It was illegal to invite strangers to adopt children, already traumatised by their personal losses, without the involvement of the Central Adoption Resource Authority (CARA), a statutory body under the Women and Child Development Ministry.
- Invitation to persons for adoption of orphans is contrary to law as no adoption of a child can be permitted without the involvement of CARA.

Central Adoption Resource Authority (CARA)

- CARA is a statutory body of the Ministry of Women & Child Development, Government of India.
- It functions as the nodal body for adoption of Indian children and is mandated to monitor and regulate in-country and inter-country adoptions.
- CARA is designated as the Central Authority to deal with inter-country adoptions in accordance with the provisions of the Hague Convention on Inter-country Adoption, 1993, ratified by the Government of India in 2003.
- CARA primarily deals with the adoption of orphan, abandoned, and surrendered children through its associated /recognized adoption agencies.
- CARA interacts with State Governments and UT Administrations through regular training and orientation programmes as well as meetings, consultations and visits to the States/UTs.
- The implementation of the adoption programme in the States/UTs...
is reviewed in various consultations organized by the Ministry as well as meetings of the Project Approval Board to consider proposals received from States/UTs for release of grants under the Integrated Child Protection Scheme.

- In 2018, CARA allowed individuals in a live-in relationship to adopt children from and within India.

Hague Convention on Adoption

- The Hague Convention on Protection of Children and Co-operation in Respect of Intercountry Adoption is an international convention dealing with international adoption, child laundering, and child trafficking.
- The Convention was developed by the Hague Conference on Private International Law, the preeminent organization in the area of private international law.
- It was concluded on 29 May 1993 and entered into force on 1 May 1995.
- It is an effort to protect those involved from the corruption, abuses, and exploitation which sometimes accompanies international adoption.
- The Convention has been considered crucial because it provides a formal international and intergovernmental recognition of intercountry adoption to ensure that adoptions under the Convention will generally be recognized and given effect in other party countries.
- 96 countries including India has signed and ratified this convention. Whereas Nepal, South Korea, and Russia are yet to ratify it.

- The order came after the National Commission for Protection of Child Rights (NCPCR), on Monday, raised the alarm on a spate of complaints about illegal adoption of COVID-19 orphans through private individual and organisations.
- NCPCR statistics show that 3,621 children were orphaned, 26,176 children lost either parent and 274 abandoned between April 1, 2021 to June 5, 2021.
The court is hearing a suo motu case on the plight of children impacted by the pandemic.

National Commission for protection of Child Rights, 2005

1. It is a **Statutory** Body. NCPCR has given the definition of child to be less than 18 years.
2. NCPCR can take up **suo-motu cases**.
3. **Mandate:** To ensure that all Laws, Policies, Programmes, and Administrative Mechanisms are in consonance with the **Child Rights** given in **Constitution and UN Convention** on Rights of Child.
4. NCPCR had asked to form **special cells in schools** to solve problems of children. The cell will examine the **mental & physical torture** against children. Complainsts regarding sexual harassment, mental harassment, favouritism etc. should be informed to the Taluk/District Legal Services Authority within **48 hours**.
5. It is the nodal body for **Right to Education and Child abuse**.

**Main Recommendations of NCPCR:**

1. **Seminars** should be conducted for teachers to improve their teaching styles.
2. The **dignity** of a student should be accepted by everyone.
3. **Drug addiction, copying, violence** etc. should be curtailed.
4. **State Commissions** of Protection of Child Rights should be established.

**Child trafficking**

- Advocate Gaurav Agrawal, amicus curiae, said cases of child trafficking have been going up.
- The government should intervene to care and protect children orphaned, abandoned or whose families have lost their earning members.
- The court said lack of knowledge about the rights of children under the Juvenile Justice Act had led to many falling victim to efforts at illegal adoption.
- It directed the Centre, States and the Union Territories to give wide publicity...
to the provisions of the 2015 Act at regular intervals so as to make the general public, children and their parents or guardians aware of such provisions.

- It ordered the States and the Union Territories to continue with their efforts to identify children in need of care and protection after March 2020 and upload their details on the NCPCR database in order to provide them welfare schemes.

Source: TH

BRICS Joint Statement on Multilateralism

About BRICS

BRICS INDIA 2021
BRIC was formed in 2006. South Africa joined in 2012. It is an informal organization with no charter. All coming as a part of changing world order, South South cooperation, multilateralism, increased accommodation in global, attracting investment & stab eco system. It was formed in the context China and India, by 2050, become the world’s dominant suppliers of manufactured goods and services. The term BRIC was coined by Goldman Sachs Economists like Jim O’Neill. O’Neill’s paper was named “Building Better Economic BRICS”. It comprises 42% of the world's population, has 23% of the global GDP but just 17% of the world trade. BRICS represents the World’s top emerging economies and claims to serve as a bridge between the developed and developing World. Objectives: More sustainable, equitable and mutually beneficial development.

There are 4 main Areas of cooperation:

- **Economic cooperation**: in Innovation, Customs and Strategic coop between BRICS Business Council, Contingent Reserve Agreement and NDB.
- **People to People Exchange**: in culture, sports, education, film and youth. Eg. Young Diplomats Forum, Parliamentarian Forum, Civil BRICS etc.
- **Political and Security Cooperation**: aimed at achieving peace, security, development and cooperation. BRICS is used as a driver for African Agenda and South-South cooperation.
- **Cooperation Mechanism**
  1. Track I (Government to Government);
  2. Track II (Government affiliated institutions) and
  3. Track III (People to people).
- **Chairperson**: The Chair country goes by the name B, R, I, C, S in that order. 2019 – Brazil was the Chair. 2020 – Russia. **In 2021 India will host 13th BRICS Summit and India is a Chair in 2021.**

BRICS Summits

- **2017 Summit in Xiamen, China**
  1. China introduced BRICS+ by inviting a few countries from different regions like Argentina, Jamaica, Turkey, Indonesia and Egypt.
- **2018 Summit in Johannesburg, South Africa**:
  1. Theme was BRICS in Africa: Collaboration for inclusive growth and shared prosperity in the IR 4.0.
  2. BRICS Outreach programme was with African leaders and Outreach
with Global South summit.
3. It also calls for Comprehensive Convention on International Terrorism (CCIT) by UNGA.
4. Discussed on democratisation of UN, expansion of UNSC.
5. Leaders stressed on the centrality of the rules based transparent, non discriminatory, open and inclusive multilateral trading based on WTO.
6. Help nations prepare for IR 4.0 BRICS PartNIR (Partnership on New Industrial Revolution). It should engage Private sector and Young innovators.

**2019 11th Summit Brasilia:** Brasilia is the 1st city to hold its 2nd BRICS summit
1. Brazil is the current Chair of BRICS. President is Jair Bolso
2. **BRICS Bond Fund** in local currency is on the financial agenda of Brasilia meet.
3. Russia (like BRICS) rejects diktat and pressure, blackmail and threats, let alone the use of force without UNSC's decision.
4. BRICS is committed to **democratization of international** life and it's development under the **principles given in UN charter**, the principles of respect for cultural and civilizational diversity of world and the right of people to forge their destiny themselves.
5. BRICS is also becoming a **magnet for major Emerging economies**. Coz BRICS protects **multilateralism**, supports **transparent**, non discriminatory, open, free and inclusive International Trade and rejects unilateral economic restrictions in developing International economic ties.
6. BRICS CRA = $ 100 bn to be a guarantor of thr BRICS financial stability in case of crisis.

**G20 Osaka Summit, Japan (2019)**
1. BRICS in G20 Osaka summit indicated to protect multilateral trade system, role of WTO & IMF reforms.
2. It talks about Regional Groupings like: RIC (Russia-India-China); JIU (Japan-India-USA) and BRICS (Brazil-Russia-India-China-South Africa). This shows **India’s rising power in the World.**

**Achievements of BRICS**

- Because of financial crisis of 2008, BRICs started to cooperate. BRICS called for the reform of multilateral institutions. BRICS managed to push for international reform which led to **IMF Quota reform in 2010.**
- **BRICS New Development Bank:** 2014 Fortaleza Summit: See below
- They are developing a joint payments mechanism to reduce foreign trade
BASIC (BRICS without Russia) is an offshoot dealing with Climate Change.

India is taking the lead role in digital health, digital forensics, film technology, traditional medicine, sustainable water management, internships and fellowships.

Potential of Brazil's investments in space, defence, agri equipment, animal husbandry, post harvest technologies and biofuels.

**BRICS New Development Bank**

- Because of overdomination of USA and EU in IMF, BRICS in Fortaleza summit came up with New Development Bank as an alternative to IMF and WB. Made by Fortaleza declaration in 2014. 1st time talked in Delhi (4th Summit) but established in Fortaleza. President – K V Kamath. Headquarter in Shanghai.
- The purpose of the Bank is to mobilise resources for infrastructure and sustainable development projects in BRICS and other emerging market economies and developing countries to complement the existing efforts of multilateral and regional financial institutions.
- NDB's Key area of Operation are clean Energy, Transport infra, irrigation, sustainable urban development and economic cooperation.
- The NDB functions on a consultative mechanism among the BRICS members with all the member countries possessing equal rights.
- Contingent Reserve Arrangement (CRA) signed in 2014 Fortaleza Declaration at 6th BRICS summit.
  1. The BRICS CRA aims to provide short-term liquidity support to the members through currency swaps to help mitigating BoP crisis situation and further strengthen financial stability.
  2. It has a corpus of US $ 100 billion. It will also contribute to strengthening global financial safety net and complement existing international arrangements (IMF).

**Significance of BRICS**

- India can collaborate on global issues like Terrorism, climate change, Energy security.
- India would need the support for its UNSC and NSG membership.
- NDB approved 1st set of loans which included US $ 250 million for India for Renewable Energy.
- BRICS gave 1 billion each to India, Brazil and South Africa.
1st time India talked about Traditional medicine systems in BRICS NDB meeting.

**Challenges pertaining in BRICS**

- BRICS combined population is 40% World but trade is just 15%.
- Dilution under G20.
- India - China issues.
- No formalization due to draft or Constitution.
- Global political turmoil. Various regions still have conflict potential. *Arms control architecture is deliberately undermined* with US withdrawal from Intermediate Range Nuclear Force Treaty.
- **Structural imbalances** in the World Economy. Threats from unfair competition practices, sanctions, trade wars, abuse of US $ status as World reserve currency.
- **Terrorism** and **Climate Change**. Terrorism has caused loss of $1 trillion to World Economy.

**Way Forward**

- To become a true representative of Emerging economies, BRICS must **increase membership and expand its agenda** to climate change, development finance etc. **BRICS + and NextEleven (N – 11) = 11 countries poised to become the biggest economies in the World in 21st C after BRICS.** They are South Korea, Mexico, **Bangladesh**, Egypt, Indonesia, Iran, Nigeria, Pakistan, Phillipines, Turkey and Vietnam.
- It will be useful for BRICS to develop an **institutional research wing on the lines of OECD**, offering solutions relevant to the developing World.
- BRICS can consider on Climate Change and UN SDGs through setting up **BRICS Energy alliance** and Energy Policy.
- Idea of setting up a **BRICS Credit Rating Agency (BCRA)** as proposed by India (opposed to West Standard and Poor, Moody) can be on BRICS Future Agenda.

**BRICS Joint Statement on Multilateralism**

- The BRICS Foreign Ministers, at a virtual meet last week, put out a **joint statement on multilateralism**, in addition to the usual Ministers’ press statement.
- China’s Foreign Ministry on Monday said the idea behind the statement was to forge a **common understanding among the BRICS countries when**
there were “so many different interpretations and definitions of multilateralism in the world”.

- Ironically, among the targets of Beijing’s recent attacks on what it calls “selective multilateralism” is the India-Australia-Japan-U.S. Quad grouping, which Chinese officials have repeatedly criticised.
- India, which is the BRICS chair this year and will host this year’s leaders summit, which may also take place virtually, finds itself in a curious position of being described by Beijing as both a partner and a target in its recent emphasis on the importance of “multilateralism” and its criticism of calls for a “rules-based order”, voiced not only by the U.S. but also by the Quad.

The BRICS Joint Statement on Strengthening and Reforming the Multilateral System laid out the following principles:

- First, it should make global governance more inclusive, representative and participatory to facilitate greater and more meaningful participation of developing and least developed countries.
- Second, it should be based on inclusive consultation and collaboration for the benefit of all.
- Third, it should make multilateral organisations more responsive, action-oriented and solution-oriented based on the norms and principles of international law and the spirit of mutual respect, justice, equality, mutual beneficial cooperation.
- Fourth, it should use innovative and inclusive solutions, including digital and technological tools.
- Fifth, it should strengthen capacities of individual States and international organizations.
- Sixth, it should promote people-centered international cooperation at the core.

Source: TH

Antonio Guterres is the UN General Secretary for a second term
GS-II | 09 June,2021

Antonio Guterres is the UNSC General Secretary for a
The United Nations Security Council on Tuesday approved Secretary General Antonio Guterres for a second term, with conflict resolution set to top his agenda at the world body’s helm. The 72-year-old former Prime Minister of Portugal has held the office since 2017 and faced no competition for the next term in the job. During a brief closed door session the Security Council voted unanimously to recommend that the General Assembly give Mr. Guterres another term, said the council’s current President, Estonian ambassador Sven Jurgenson. Approval from the General Assembly is seen as a formality and expected to take place soon. During his first term, Mr. Guterres was forced to concentrate on limiting the potential damage from the unilateral and nationalist foreign policy of then U.S. President Donald Trump.

UN Security Council

The United Nations Charter established 6 main organs of the United Nations, including the Security Council. It gives primary responsibility for maintaining international peace and security to the Security Council, which may meet whenever peace is threatened. While other organs of the United Nations make recommendations to member states, only the Security Council has the power to make decisions that member states are then obligated to implement under the Charter. UNSC has 15 members (5 are permanent and 10 non-permanent). Non-permanent members elected for 2-year terms by the UNGA.

1. UNSC has 5 permanent members namely France, UK, China, Russia and USA.
2. 10 non permanent seats are distributed on a regional basis
   1. 5 for African and Asian States.
   2. 1 for Eastern Europe States
   3. 2 for Latin American and Caribbean States and
   4. 2 for Western Europe and other States.
3. Each year 193 member UNGA elects 5 non permanent members for a 2 year term at UNSC, with 5 replaced each year. A retiring member is not eligible for re-election.
4. The Asia-Pacific Group gets to nominate one of its members for the 2020 elections to a non-permanent seat of UNSC. India won the unanimous support of all countries in 55 member Asia Pacific
Group at UN for its bid for a non permanent seat at UNSC for a 2 year term in 2021-22.

Source: TH
Plastic Pollution in India

Ankit Sir has explained Plastic pollution and Management in India through Free video lectures: [Click here to watch the video](#)

[Click here](#) to get the High Quality comprehensive notes by AspireIAS on Plastic Management in India.

Source: PIB

Energy Efficiency Schemes in India

**Energy Efficiency Schemes in India**

- The Ministry of Power is implementing measures to save energy with an objective to reduce CO2 emission levels in the environment from industries, establishments and by using equipment/ appliances.
- In this regard, **Perform Achieve and Trade (PAT) Scheme** is a key programme for large industries and establishments.

**Perform Achieve and Trade (PAT) Scheme**

- This scheme aims to **enhance the cost-effectiveness of energy savings** by **upgrading technologies or by taking in-house actions** to minimize energy consumption.
- The scheme provides **mandatory targets** for the identified Large Units and the excess energy saved by them is issued as **Energy Saving Certificate**, which are **tradable** instruments.
- The different industries and establishments are assigned **separate energy efficiency targets** based on their levels of energy consumption and the potential for energy savings.
- By the year 2020 the scheme coverage has been **extended to 13 most**
energy intensive sectors in the country including Cement, Iron and Steel, Fertilizer, Thermal Power Plants, Refineries, Petrochemicals, Railways and others.

- This initiative is currently leading to energy savings of about 17 MTOE (Million Tonnes of Oil Equivalent) and has resulted into mitigation of about 87 million tonnes of CO2, per year, a figure close to total CO2 emissions of country like Bangladesh.

Standards and Labeling (S&L) Program

Appliances are the main points for electricity consumption at household level or at office and commercial establishments. In view of the rapid growth in high energy consumer goods, the demand for electrical energy has been increasing every year. This rising demand can be optimized, if the consumers prefer high efficiency appliances.

- To enable market transformation of efficient products, Standards and Labeling (S&L) Program was introduced by the Bureau of Energy Efficiency (BEE).
- The objective of S&L is to provide the consumers, an informed choice about the energy savings potential and thereby the cost saving due to the products available in the market.
- The scheme includes display of energy performance labels on key energy consuming equipment & appliances, with stipulation for minimum energy performance standards.
- The scheme has now included 28 appliances till March 2021 and over 15000 models of energy efficient products have been awarded Star labels, a popular symbol among the consumers for endorsing energy savings.
- The impact of using a huge number of efficient products by the citizens have resulted into an estimated electricity savings of 56 Billion Units during 2020-21, worth over Rs. 30000 crore.
- This initiative has been effective in reducing the CO2 emissions of approx. 46 Million Tonnes every year.
- Such steps have become very effective and a simplified approach is considered more useful to promote energy efficiency globally.
- Many countries have followed this labeling programme, thereby reaping benefits of energy savings and also in reducing CO2 emissions.

About Bureau of Energy Efficiency (BEE)

- The Government of India has set up the Bureau of Energy Efficiency (BEE)

- The mission of the Bureau of Energy Efficiency is to assist in developing policies and strategies with a thrust on self-regulation and market principles with the primary objective of reducing energy intensity of the Indian economy within the overall framework of the Energy Conservation Act, 2001.
- This will be achieved with active participation and collaboration of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.
- BEE’s span of Energy Conservation and Efficiency efforts covers areas such as Appliance, Buildings, Transport, key Demand Side Management programs in Agriculture and Municipalities and the Industry and other Establishments.

Source: PIB
Atlantic Charter after 80 years

What is Atlantic Charter?

- The Atlantic Charter was a joint declaration issued during World War II (1939-45) by the United States and Great Britain that set out a vision for the postwar world. It was announced on August 14, 1941.
- Among its major points were a nation’s right to choose its own government, the easing of trade restrictions and a plea for postwar disarmament.
- The document is considered one of the first key steps toward the establishment of the United Nations in 1945.

The Atlantic Charter included 8 common principles:

- Among them, the United States and Britain agreed not to seek territorial gains from the war, and they opposed any territorial changes made against the wishes of the people concerned.
- The two countries also agreed to support the restoration of self-government to those nations who had lost it during the war.
- Additionally, the Atlantic Charter stated that people should have the right to choose their own form of government.
- Other principles included access for all nations to raw materials needed for economic prosperity and an easing of trade restrictions.
- The document also called for international cooperation to secure improved living and working conditions for all; freedom of the seas; and for all countries to abandon the use of force.

US – UK signed Atlantic Charter

- President Joe Biden and Prime Minister Boris Johnson of Britain signed a new version of the 80-year old “Atlantic Charter”, using their first meeting to redefine the Western alliance and accentuate what they said was a growing divide between battered democracies and their autocratic rivals, led by Russia and China.
- The two leaders unveiled the new charter as they sought to focus the world’s attention on emerging threats from cyberattacks, the COVID-19 pandemic that has upended the global economy, and climate change, using language about reinforcing NATO and international institutions that
Biden hoped would make clear that the Trump era of America First was over. But the two men also continued to grapple with old-world challenges, including Biden’s private admonishment of the prime minister against taking actions that could inflame sectarian violence in Northern Ireland. The new charter, a 604-word declaration, was an effort to stake out a grand vision for global relationships in the 21st century, just as the original, first drafted by Winston Churchill and Franklin D. Roosevelt, was a declaration of a Western commitment to democracy and territorial integrity just months before the United States entered World War II. In a direct rebuke of Russia and China, the new agreement calls on Western allies to “oppose interference through disinformation or other malign influences, including in elections.” It ranks the threats to democratic nations in a technological era: “We affirm our shared responsibility for maintaining our collective security and international stability and resilience against the full spectrum of modern threats, including cyber threats.” And it vows that “as long as there are nuclear weapons, NATO will remain a nuclear alliance. Our NATO Allies and partners will always be able to count on us, even as they continue to strengthen their own national forces.” The new charter explicitly calls for both countries to adhere to “the rules-based international order,” a phrase that Trump and his aides sought, unsuccessfully, to banish from previous statements by Western leaders, convinced that it represented a globalist threat to Trump’s America First agenda at home. Public health experts applauded Biden’s announcement. If earlier donations had been little more than Band-Aids on an enormous global vaccine deficit, the 500 million doses were more in keeping with the scale of the challenge, they said. Negotiations over the arrangements, known as the Northern Ireland Protocol, have grown increasingly contentious, with Britain threatening to pull the plug on the deal unless Brussels makes concessions.
Agriculture Mechanization in India

Why is Agriculture Mechanisation important?

- Agricultural Mechanization plays a vital role in optimizing the use of land, water energy resources, manpower and other inputs like seeds, fertilizers, pesticides etc to maximize the productivity of the available cultivable area and make agriculture a more profitable and attractive profession for rural youth.
- Agricultural Mechanization is one of the key drivers for the sustainable development of the agriculture sector.
- Sustainable Agriculture mechanization growth will require appropriate and precision agricultural machinery adequately supported by the latest technology.

Sub mission on Agriculture Mechanization

- Ministry of Agriculture and Farmers Welfare has launched a Sub-Mission on Agricultural Mechanization (SMAM) in 2014-15 with the objectives of increasing the reach of farm mechanization to small and marginal farmers and to the regions & difficult area where farm power availability is low.
- To boost up mechanization in the agriculture sector improved agricultural implements and machinery are essential inputs for modern agriculture that enhance the productivity of crops besides reducing human drudgery and cost of cultivation.
- Mechanization also helps in improving the utilization efficiency of other inputs therefore considered to be one of the most important segments of the agriculture sector to boost the income of farmers and growth of the agricultural economy.
- For strengthening of agricultural mechanization in the country and to bring more inclusiveness Sub-Mission on Agricultural Mechanization (SMAM) has been introduced with the main objectives of are

1. To promote ‘Custom Hiring Centres’ and ‘Hi-tech Hubs of High-Value Machines’
2. To offset the adverse economies of scale arising due to small and fragmented landholding and high cost of individual ownership;
3. Creating awareness among stakeholders through demonstration and capacity building activities and
4. ensuring performance testing and certification of agricultural machines at
designated testing centres located all over the country.

- To empower the farmers through Sub-Mission on Agricultural Mechanization (SMAM) scheme, Government of India has released funds for various activities of Farm Mechanization like Establishment of Custom Hiring Centres, Farm Machinery Bank, High-tech Hubs and distribution of various agricultural machinery etc to different states.

Source: PIB

UNDP urges to replicate Aspirational Districts programme of India

Aspirational Districts are those districts in India, that are affected by poor socio-economic indicators.

- It has a vision of Sabka Sath Sabka Vikas. It was launched in 2018.
- The 117 districts were identified from 28 states, at least one from each state.
- At the Government of India level, the programme is anchored by NITI Aayog. In addition, individual Ministries have assumed responsibility to drive the progress of districts.
- The objective of the program is to monitor the real-time progress of aspirational districts.
- ADP is based on 49 indicators from the 5 identified thematic areas, which focuses closely on improving people’s Health & Nutrition, Education, Agriculture & Water Resources, Financial Inclusion & Skill Development, and Basic Infrastructure.
- With States as the main drivers, ADP seeks to focus on the strength of each district, identify low-hanging fruits for immediate improvement, measure progress, and rank districts.
- The broad contours of the programme are:

  1. Convergence (of Central & State Schemes) which brings together the
horizontal and vertical tiers of the government.
2. Collaboration (of Central, State level ‘Prabhari’ Officers & District Collectors) which enables impactful partnerships between government, market and civil society.
3. Competition among districts driven by a spirit of the mass movement, it fosters accountability on district governments.

- The Aspirational Districts Programme (ADP) is one of the largest experiments on outcomes-focused governance in the world.
- It focuses on becoming the best district in the State and then the best in the country.
- It includes District Action Plans and convergence of Central State efforts.
- Champions of Change is the Aspirational Dist Dashboard for real time data and ranking.

What is the news?

- United Nations Development Programme (UNDP) India has lauded the Aspirational Districts Programme (ADP) as ‘a very successful model of local area development’ that ‘should serve as a best practice for several other countries where regional disparities in development status persist for many reasons’.
- The report said due to concerted efforts made under the ADP, previously neglected districts, including those in remote locations and those affected by Left Wing Extremism, ‘have experienced more growth and development in the last three years than ever before’. Notwithstanding some speedbumps in its journey, the APD ‘has been immensely successful in propelling development among the backward districts’.
- UNDP’s analysis across the 5 key sectors of the ADP—health and nutrition; education; agriculture and water resources; basic infrastructure; and skill development and financial inclusion—found that the programme has acted as a catalyst for expediting development in these districts.
- A comparison between the Aspirational Districts and their counterparts found that ADs have outperformed non-ADs.
- Across the sectors of health and nutrition and financial inclusion, the report found that 9.6% more home deliveries are attended by a skilled birth attendant; 5.8% more pregnant women with severe anemia are treated; 4.8% more children diagnosed with diarrhoea are treated; 4.5% more pregnant women register for antenatal care within their first trimester; 406 and 847 more enrolments, and 1580 more accounts opened per 1 lakh population.
under the Pradhan Mantri Jeevan Jyoti Bima Yojana, Pradhan Mantri Suraksha Bima Yojana and Pradhan Mantri Jan-Dhan Yojana, respectively.

- UNDP also recommends the ‘Malaria Mukt Bastar Abhiyaan’ in Bijapur and Dantewada, which has reduced malaria incidences in these districts by 71% and 54%, respectively, as one of the ‘best practices’ found in Aspirational Districts.
- The report also appreciated the delta rankings provided on the programme’s Champions of Change dashboard.
- The competitive and dynamic culture fostered by it has successfully pushed several low performing districts (as per baseline rankings) to improve their standing in the past three years. Simdega (Jharkhand), Chandauli (Uttar Pradesh), Sonbhadra (Uttar Pradesh) and Raigarh (Madhya Pradesh) were found to have progressed the most since the beginning of the programme.
- The report recommends several initiatives undertaken under the programme as best practices. Noteworthy among them is GoalMart, an e-commerce portal launched by Assam’s Goalpara district administration ‘to promote rural, ethnic and agrarian products of the district in the national and global markets’. The initiative has been particularly helpful during the Covid-19 lockdown as it released farmers and retailers from the clutches of brick-and-mortar shops. Goalpara’s black rice is a favorite on this portal—and it has also proven to be highly profitable to the farmers. Similarly, Uttar Pradesh’s Chandauli district decided to experiment with the cultivation of black rice, due to its high demand in global markets and good profit margins. The project was a success and high-quality black rice is now being exported to Australia and New Zealand.
- As regards challenges and suggestions, the report said some stakeholders highlighted the need to revise a few indicators that are close to being saturated or met by most districts, such as ‘electrification of households’ as an indicator of basic infrastructure. It was also found that while on average, the districts have seen an increase in resilience and decrease in vulnerabilities, the least-improved districts have witnessed an increase in vulnerabilities, which requires a special focus on the sectors in which these districts have underperformed.
- The report said ADP is ‘aligned to the principle of “leave no one behind”’—the vital core of the SDGs. Political commitment at the highest level has resulted in rapid success of the programme’.

Conclusion
Overall, the report has appreciated the positive impact of the programme and stressed on the need to ensure ‘the focus on development is encouraged further, and momentum gained so far in expediting growth is maintained. Based on the findings of the evaluation, it is recommended that the success of the programme be scaled up and replicated for other sectors and districts’.

Source: PIB

Maharashtra govt. clears action plan to protect heritage trees

The State will also bring about amendments in the Maharashtra (Urban Area) Protection and Preservation of Trees Act. It passed an action plan to protect and preserve trees older than 50 years in urban areas by terming them heritage trees. The plan includes the

1. Concept of heritage tree and plan of action for conservation;
2. Method to define age of the tree;
3. Compensatory plantation;
4. Rules to be followed before hacking trees;
5. Formation of the Maharashtra Tree Authority;
6. Structure of the local tree authority and their duties;
7. Tree census;
8. Fixing land of tree plantation;
9. Transplantation of trees; and
10. Tree cess and fine to be charged.

As per the plan, trees older than 50 will be termed heritage trees. The Environment and Climate Change Department will issue guidelines in consultation with the State Forest Department based on the existing methods.

Compensatory plantation will include planting the number of trees equivalent to the age of trees to be cut. The saplings need to be six to eight feet in height while planting and they will undergo geo-tagging with seven
years of caring period. The option of monetary compensation has also been given, instead of compensatory plantation.

- A State-level Tree Authority will be formed to protect and preserve heritage trees.

1. The authority will hear applications seeking permission to cut 200 or more trees that are five or more years old.
2. The local tree authorities will come under this body.
3. Tree experts will be part of the local tree authorities.
4. These bodies will ensure that the tree census is conducted after every five years.
5. They will also be in charge of counting heritage trees, ensuring their preservation, keeping tabs on tree plantation, pruning and caring of trees, and ensuring that 33% of government land is used for tree plantation.

- The State authority will issue directions for the use of tree cess. The fine amount cannot be more than ?1 lakh per tree in case of violations.

Source: TH
Scientists with the Canadian Hydrogen Intensity Mapping Experiment (CHIME) Collaboration, who include researchers at the Pune-based Tata Institute for Fundamental Research (TIFR) and the National Centre for Radio Astrophysics (NCRA), have assembled the largest collection of fast radio bursts (FRBs) in the telescope's first FRB catalogue.

While catching sight of an FRB is considered a rare thing in the field of radio astronomy, prior to the CHIME project, radio astronomers had only caught sight of around 140 bursts in their scopes since the first FRB was spotted in 2007.

What is CHIME?

- CHIME is an interferometric radio telescope at the Dominion Radio Astrophysical Observatory in British Columbia, Canada.
- It consists of four antennas consisting of 100 x 20-meter cylindrical parabolic reflectors with 1024 dual-polarization radio receivers suspended on support above them.
- The telescope receives radio signals each day from half of the sky as the Earth rotates.
- While most radio astronomy is done by swiveling a large dish to focus light from different parts of the sky, CHIME stares, motionless, at the sky, and focuses incoming signals using a correlator.
- This is a powerful digital signal processor that can work through huge amounts of data, at a rate of about seven terrabytes per second, equivalent to a few percent of the world's Internet traffic.

What are Fast Radio Bursts?

- FRBs are oddly bright flashes of light, registering in the radio band of the electromagnetic spectrum, which blaze for a few milliseconds before vanishing without a trace.
- These brief and mysterious beacons have been spotted in various and distant parts of the universe, as well as in our own galaxy.
- Their origins are unknown and their appearance is highly unpredictable.
- But the advent of the CHIME project — a large stationary radio telescope in British Columbia, Canada — has been a game changer and has nearly quadrupled the number of fast radio bursts discovered to date.
With more observations, astronomers hope soon to pin down the extreme origins of these curiously bright signals.

The telescope has detected a whopping 535 new fast radio bursts in its first year of operation itself, between 2018 and 2019.

When the scientists mapped their locations, they found the bursts were evenly distributed in space, seeming to arise from any and all parts of the sky.

From the FRBs that CHIME was able to detect, the scientists calculated that bright fast radio bursts occur at a rate of about 800 per day across the entire sky — the most precise estimate of FRBs overall rate to date.

Source: TH
Vehicle scrappage policy

Introduction

- Scraphage policy can work if incentives are confined to fuel-efficient vehicle replacements

Road map for scrappage policy

- The much-awaited vehicle scrappage policy announced by the Transport Ministry, coming after the move for a green tax on ageing and polluting automobiles, promises economic benefits, a cleaner environment and thousands of jobs.
- Although it will take until April 1, 2022 for vehicles belonging to the government and the public sector to be scrapped, another year thereafter to identify junk heavy commercial vehicles through mandatory fitness checks, and finally other vehicles by 2024, it is a constructive road map.

Challenge for vehicle fitness checking centre

- It will be no easy task, however, to put in place a credible system of automated fitness checking centres with help from States to assess whether commercial and private vehicles are roadworthy after 15 and 20 years, respectively, as the policy envisages.
  - Equally important, enforcement will be key to get them scrapped once they are found unfit for use and to stop them from moving to smaller towns.
- Transport Minister Nitin Gadkari, who has had limited success with enforcement of the amended Motor Vehicles Act of 2019 because States are not entirely on board, has the difficult task of ensuring that the scrappage plan gets their support, and the backing of manufacturers who stand to benefit from a spurt in demand.
- Heavy commercial vehicles, which contribute disproportionately to pollution — 1.7 million lack fitness certificates — pose the biggest challenge.

Conclusion

- Vehicle scrappage and replacement is seen internationally as a route to
rejuvenate COVID-19-affected economies by privileging green technologies, notably electric vehicles (EVs), and also as an initiative to achieve net zero emissions by mid-century under Paris Agreement commitments.

- India’s automobile ecosystem is complex, with dominant, legacy motors spanning fossil-fuel driven vehicles and a nascent EV segment.
- The industry’s share pre-COVID-19 was about 7.5% of GDP with significant downstream employment, but it also imposes a fuel import burden.
- The Centre has to arrive at a balance and have incentives that reward manufacturers of vehicles that are the most fuel-efficient.
- Failure to prioritise fuel efficiency and mandate even higher standards and enhance taxes on fuel guzzlers will only repeat the mistakes of vehicle exchange programmes abroad, where full environmental benefits could not be realised, and taxpayers ended up subsidising inefficiency.

Way forward

- States must also come on board to provide road tax and registration concessions, while the automobile industry is expected to sweeten the deal with genuine discounts on new vehicles.
- Ecological scrapping, as a concept, must lead to high rates of materials recovery, reduce air pollution, mining and pressure on the environment.

Source: TH
Every year, the Indian Coast Guard’s “Operation Olivia”, initiated in the early 1980s, helps protect Olive Ridley turtles as they congregate along the Odisha coast for breeding and nesting from November to December.

The Olive Ridley (Lepidochelys olivacea) is listed as vulnerable under the International Union for Conservation of Nature’s Red list.

All five species of sea turtles found in India are included in Schedule I of the Indian Wildlife Protection Act, 1972, and in the Appendix I of the Convention of International Trade in Endangered Species of Wild Fauna and Flora which prohibits trade in turtle products by signatory countries.

The Orissa Marine Fisheries Act empowers the Coast Guard as one of its enforcement agencies.

The Olive Ridley has one of the most extraordinary nesting habits in the natural world, including mass nesting called arribadas. The 480-km-long Odisha coast has three arribada beaches at Gahirmatha, the mouth of the Devi river, and in Rushikulya, where about 1 lakh nests are found annually.

Sea turtles generally return to their natal beach, or where they were born, to
lay eggs as adults. Mating occurs in the offshore waters of the breeding grounds and females then come ashore to nest, usually several times during a season.

- “Studies have found three main factors that damage Olive Ridley turtles and their eggs — **heavy predation of eggs by dogs and wild animals**, **indiscriminate fishing with trawlers and gill nets**, and **beach soil erosion**.
- Dense fishing activity along the coasts of Andhra Pradesh, Odisha and Bengal, especially ocean-going trawlers, mechanised fishing boats and gill-netters pose a severe threat to turtles.
- Coordination of efforts is done at various levels, the officer explained, including enforcing the use of turtle excluder devices (TED) by trawlers in the waters adjoining nesting areas; prohibiting the use of gill nets on turtle approaches to the shore; and curtailing turtle poaching.

Source: TH

---

**Project O2 for India**

**GS-III | 13 June, 2021**

**Project O2 for India**

- The second wave of COVID-19 saw an increase in demand for medical oxygen in different parts of the country.
- While meeting the current demand, manufacturing medical oxygen also became important to ensure we have adequate supply in the future. ‘Project O2 for India’ of the Office of Principal Scientific Adviser, Government of India, is to enable stakeholders working to augment the country’s ability to meet this rise in demand for medical oxygen.
- Under Project O2 for India, a **National Consortium of Oxygen** is enabling the national level supply of critical raw materials such as zeolites, setting up of small oxygen plants, manufacturing compressors, final products, i.e., oxygen plants, concentrators, and ventilators.
- The consortium is not only looking forward to providing immediate to short-term relief but also working to strengthen the manufacturing ecosystem for long-term preparedness.
A committee of experts has been evaluating critical equipment such as oxygen plants, concentrators, and ventilators, from a pool of India-based manufacturers, start-ups, and MSMEs (in partnership with FICCI, MESA, etc.).

The manufacturing and supply consortium also includes Bharat Electronics Limited (BEL); Tata Consulting Engineers (TCE); C-CAMP, Bengaluru; IIT Kanpur (IIT-K); IIT Delhi (IIT-D); IIT Bombay (IIT-B); IIT Hyderabad (IIT-H); IISER, Bhopal; Venture Center, Pune; and more than 40 MSMEs.

The consortium has started to secure CSR/philanthropic grants from organizations like USAID, Edwards Life sciences Foundation, Climate Works Foundation, etc. Hope Foundation, American Indian Foundation, Walmart, Hitachi, BNP Paribas, and eInfoChips are procuring oxygen concentrators and VPSA/PSA plants as part of their CSR efforts to aid the consortium’s work. NMDC Ltd has agreed to fund the procurement of raw materials like zeolite for the manufacturers in the consortium.

Source: PIB
What is G7?

G7 is a Group of 7 most advanced economies as per International Monetary Fund. They are Canada, USA, UK, France, Germany, Italy and Japan.
The 47th G7 Summit is scheduled to be held between June 11 and 13, 2021 in United Kingdom.

It is the first physical G7 summit to be held in two years and will take place in Carbis Bay, Cornwall, the UK.

The Indian Prime Minister Narendra Modi has also been invited to be a part of the Summit.

The Objective of the 47th G7 Summit is to unite leading democracies to help the world build back better from the coronavirus and create a greener, more prosperous future. It shall aim at:

1. Leading the global recovery from the Novel Coronavirus while strengthening resilience against future pandemics.
2. Promoting future prosperity by championing free and fair trade.
3. Tackling climate change and preserving the planet’s biodiversity.
4. Championing globally shared values.

Outcomes of the 47th G7 Summit

A look at some of the key outcomes of the G7 summit

- G7 to donate 1 billion vaccine doses to developing nations
- G7 to Build Back Better World (B3W) alternative infrastructure initiative to counter China’s BRI
- It reaffirms tax deal for global minimum corporate tax rates
- It calls for inquiry into the origins of COVID-19
- PM calls on tech companies and social media platforms to ensure a safe cyber environment for all

Outcomes of G7 Summit
G7 leaders agreed on Sunday to raise their contributions to meet an overdue spending pledge of $100 billion a year to help poorer countries cut carbon emissions and cope with global warming, calling on other developed countries to join the effort. But campaigners said firm cash promises were missing.

Alongside plans billed as helping speed infrastructure funding in developing countries and a shift to renewable and sustainable technology, the world’s seven largest advanced economies again pledged to meet the climate finance target.

But climate groups said the promise made in the summit’s final communique lacked detail, most importantly a figure for the increases.

Germany said it would boost its contribution by 2 billion to 6 billion euros ($7.26 billion) a year by 2025 at the latest.

In the communique, the seven nations — the U.S., Britain, Canada, France, Germany, Italy and Japan — reaffirmed their commitment to “jointly mobilise $100 billion per year from public and private sources, through to 2025”.

“Towards this end, we commit to each increase and improve our overall international public climate finance contributions for this period and call on other developed countries to join and enhance their contributions to this effort.”

There was a clear push by leaders at the G7 summit in southwestern England to try to counter China’s increasing influence in the world, particularly among developing nations.

The leaders signalled their desire to build a rival to Beijing’s multi-trillion-dollar Belt and Road initiative but the details were few and far between.

G7 countries account for 20% of global carbon emissions, and we were clear this weekend that action has to start with us.

“And while it’s fantastic that every one of the G7 countries has pledged to wipe out our contributions to climate change, we need to make sure we’re achieving that as fast as we can and helping developing countries at the same time.”

Developed countries agreed at the UN in 2009 to together contribute $100 billion each year by 2020 in climate finance to poorer countries, many of whom are grappling with rising seas, storms and droughts made worse by climate change. That target was not met, derailed in part by the pandemic that also forced Britain to postpone the UN Climate Change Conference (COP26) until later this year.

The G7 also said 2021 should be a “turning point for our planet” and to accelerate efforts to cut greenhouse gas emissions and keep the 1.5 Celsius
Outcomes of the 47th G7 Summit: Indian perspective

- **India is a “natural ally”** to work with the world’s richest G7 countries to fight against threats of authoritarianism, said Prime Minister Narendra Modi, speaking at a special outreach session for guest countries on “Open Societies and Open Economies” at the G7 summit that ended in Corbis Bay, U.K.
- Marking out the need for a “free, open and inclusive” Indo-Pacific, officials also said the government will study U.S. President Joseph Biden’s proposal for a “Build Back Better World” (B3W) initiative, seen as a counter to China’s trillion-dollar Belt and Road Initiative, that was endorsed by the G7, keeping in mind the principles of “transparency and inclusion”.
- However, in a departure from the main 25-page G7 communique, which was issued by U.S., U.K., Germany, France, Canada, Italy and Japan, and contained negative references to China on the issue of its aggression in the East and South China Sea, and human rights issues in Xinjiang, MEA officials said Chinese aggression “was not raised” at the outreach meetings with guest countries Australia, South Korea and South Africa, and that there are “other forums” where it is being discussed.
- The communique also made a strong call for a “timely, transparent, expert-led, and science-based WHO-convened Phase 2 COVID-19 Origins study including, as recommended by the experts’ report, in China,” that India had also called for in a statement during the World Health Assembly last month.
- Mr. Modi also called on “tech companies and social media platforms” to ensure a “safe cyber environment” for all, a statement significant given the government’s recent regulatory issues with Facebook, Twitter and other tech companies.

Source: TH

---

**New Critically Endangered Tree species discovered in Andaman Islands**

GS-III | 14 June, 2021
New Critically Endangered Tree species discovered in Andaman Islands

A 15-metre-tall tree that belongs to the genus of the coffee family has recently been discovered from the Andaman Islands by a team of researchers from India and the Philippines. The new species, *Pyrostria laljii*, is also the first record of the genus *Pyrostria* in India, the researchers said. Plants belonging to genus *Pyrostria* are usually found in Madagascar, but the recently discovered species is new to science. The tree is distinguished by a long stem with a whitish coating on the trunk and oblong-obovate leaves with a cuneate base, and was first reported from the Wandoor forest in South Andaman. The other places in the Andaman and Nicobar Islands where the tree could be located are the Tirur forest near the Jarawa Reserve Forest and the Chidia Tapu (Munda Pahar) forest. *Pyrostria laljii* has been assessed as ‘Critically Endangered’ based on the...
International Union for Conservation of Nature’s (IUCN) Red List criteria.

- While the genus Pyrostria is not found in India, there are several genera from the family Rubiaceae that are common in India.
- These plants, including cinchona, coffee, adina, hamelia, ixora, galium, gardenia, mussiaenda, rubia, morinda, have high potential for economic value. More studies should be carried out to ascertain whether Pyrostria laljii could have some economic value.
- Other physical features that distinguish the tree from other species of the genus is its umbellate inflorescence with eight to 12 flowers.

Source: TH

---

Inflation and Industrial output data.
GS-III | 14 June, 2021

The latest retail inflation and industrial output data from the National Statistical Office (NSO) offer some relief from the pall of gloom cast by the relentless second wave of the COVID19 pandemic.

The recent statistics:

- Provisional headline inflation slowed to a three-month low of 4.29% in April, helped by softer food prices and a statistical base effect. The rate using an imputed index for the year earlier period was 7.22%.
- Index of Industrial Production (IIP) estimates show all three sectoral constituents of the index-mining, manufacturing and e suffered effecting, which accounts for 77.6% of the IIP, saw production shrink 12.6% from March, and contributing to a 13% sequential contraction in overall industrial output.
- Output of capital goods and consumer durables also lagged the corresponding 2019 levels by 14.3% and 11.6%.
- Consumer non-durables, comprising household essentials, witnessed an almost 11% contraction from March, testifying to the demand destruction that has accompanied the second wave.
- A separate NSO release showed March industrial output jumped by 22.4%, benefiting again from the fact that the Index of Industrial Production (IIP) had posted an 18.7% contraction in March 2020, when the economy was halted by the start of a nationwide lockdown.
- Composite PMI Output Index slid from 55.4 in April to 48.1 in May indicating a moderate reduction in activity. New vehicle registrations more than halved in May from the previous month, another tell-tale sign of the demand drought.
- A closer look at the inflation data reveals a substantial cooling in the prices of cereals, milk and milk products, vegetables, and pulses and products.
- While both cereals and vegetables saw a deflationary trend widen to 2.96% and 14.2%, respectively, dairy products, which have the second largest weight in the food and beverages category, also slid into deflation territory at 0.13%.
- And price gains in pulses, having been stubbornly stuck in the double digits over an 18 month stretch, decelerated into single digits to reach a 20month low of 7.51%.
- The combined impact slowed inflation across the food and beverages group by more than 250 basis points to 2.66%.
- Still, the same Consumer Price Index data also point to persistent price pressures that could potentially fan faster inflation in the coming months, especially at time when the socioeconomic burden of the crippling pandemic and the impact of the lockdown that several States are resorting to is yet to be fully gauged.
- Price gains in meat and fish quickened to 16.7% and was little changed at 10.6% in the case of eggs, while inflation
in oils and fats accelerated almost 100 basis points to 25.9%.

- Transport and communication also remained in the double-digit range at 11.04%, despite benefiting from the virtual freeze in the pump prices of petroleum products that coincided with last month’s Assembly elections.
- Now, with global crude oil starting to firm again and local petrol and diesel prices resuming their upward trajectory, the prospect of haulage costs —for transporting goods from factory and farm gates — rising in the near term is very real.
- The rising international commodity prices and the outlook for inflation gets even more cloudy.
- Industrial production numbers may also provide cheer only for a limited period, aided in no small measure by output having crated in the first few months of the last fiscal.
- HIS Markit’s PMI survey for April showed new orders and output having slowed to eight month lows, and with the pandemic triggered factory shutdowns threatening supply disruptions, industrial production and inflation face challenges. Policymakers must stay vigilant to ensure price stability even as measures to bolster demand are the need of the hour.

For more on economic impact due to pandemic

Source: TH

IIT Ropar develops nation's first power-free CPAP device 'Jivan Vayu'

IIT Ropar develops nation's first power-free CPAP device 'Jivan Vayu'

- Indian Institute of Technology, Ropar has developed a device ‘Jivan Vayu’ which can be used as a substitute of CPAP machine.
- What is Continuous Positive Airway Pressure (CPAP)?

1. CPAP is a treatment method for patients having breathing problems during sleep called sleep apnea.
2. The machine uses mild air pressure to keep the airways open for easy breathing.
3. It is also used to treat infants whose lungs have not fully developed.
4. The machine blows air into the baby’s nose to help inflate his or her lungs.
   The treatment is all the more necessary during early stages of the Covid-19 infection.
5. It reduces lung damage and allow patients to recover from the inflammatory effects.

- However, this is Nation’s first such device which functions even without
electricity and is adapted to both kinds of oxygen generation units like O2 cylinders and oxygen pipelines in hospitals.

- These provisions are not available in otherwise existing CPAP machines.
- Fulfilling all the medically required parameters, this leak-proof, low-cost CPAP delivery system, “Jivan Vayu’ is designed for a 22mm CPAP closed circuit tube. It can even be customized as per the size of the tube. Since it can run during power failures, this can be used to safely transport a patient.
- It has an inbuilt viral filter at the air entrainment end which has a viral efficacy of 99.99%. The viral filter ensures that the air does not bring in any pathogens from the environment.
- The device has been manufactured using 3D printing and has also been tested mechanically.
- ‘Jivan Vayu’ can deliver high flow oxygen (20–60 LPM) while maintaining a continuous positive pressure of up to 20 cm H2O. The device is designed to maintain an FiO2 of above 40% with a PEEP (positive end-expiratory pressure) of 5-20 cm H2O.

Figure 1: Jivan Vayu breathing circuit for CPAP therapy delivering a positive pressure of up to 20cm H2O and accelerated flow rate of up to 60 LPM

Source: PIB
Inflation and Monetary Policy Committee

What is the news?

- Rising fuel and edible oil costs sent India's wholesale prices inflation soaring to a record 12.94% in May, up from 10.5% in April, and nudged retail inflation to a six-month high of 6.3%, going past the central bank's tolerance threshold of 6%.
- Consumers experienced an inflation of 11.58% for the 'fuel and light' category in May, with urban India bearing a bigger hit of 14.24% on the same account. Food inflation reheated to 5.1% from just 1.96% in April. Rating agency ICRA reckoned that core inflation (without factoring in food and fuel prices) also hit an 83-month high of 6.6%.
- Overall retail prices saw a sharper spurt in rural areas from 3.75% in April to 6.5% in May.

What is Inflation?

- Inflation can be defined as a calculated surge in the average prices of goods and services for a longer duration in the economy.
- It is a macro concept, wherein the effect of inflation is seen over a large basket of goods.
- The ultimate effect of inflation is that the value of money is reduced i.e., the purchasing power of money is reduced.

Types of Inflation

1) Cost Push Inflation

- It is caused by rise in the prices of imgs like raw material cost, electricity charges or wage rate (including a rise in profit margin made by the producer).
- Ex. Price rise of coal/ crude oil may cause price rise in industries which use coal.
- In India, cost push inflation is the major supply side factor producing inflation.
- It can't be managed by monetary policy intervention by RBI. We have to augment production of commodities or imports. Other conventional measures are providing incentives like subsidies, tax cuts, and launching production boosting programmes like NFSM.
- Other reasons:
1. Increase in price of imgs
2. Hoarding and Speculation of commodities
3. Defective Supply chain
4. Increase in indirect taxes
5. Depreciation of Currency
6. Crude oil price fluctuation
7. Defective food supply chain
8. Low growth of Agricultural sector
9. Food Inflation (growth agriculture sector has been averaging at 3.5%

2) Demand Pull Inflation

1. It is caused by increased demand or income in the economy (due to increased money supply), without adequate increase in supply of output.
2. Ex. “too much money chasing too few goods” is an instance of demand pull inflation.
3. Monetary Policy is the best way to tackle demand pull inflation. Increase in Repo rate will decrease demand for loans. Additional taxation by the Govt and reduced public expenditure are also good to reduce demand.
4. This type of inflation is caused due to an increase in aggregate demand in the economy. Other reasons are:
   - A growing economy or increase in the supply of money – When consumers feel confident, they spend more and take on more debt. This leads to a steady increase in demand, which means higher prices.
   - Asset inflation or Increase in Forex reserves- A sudden rise in exports forces a depreciation of the currencies involved.
   - Government spending or Deficit financing by the government – When the government spends more freely, prices go up.
   - Due to fiscal stimulus
   - Increased borrowing
   - Depreciation of rupee

Other Types of Inflation

i. **Disinflation**: Reduction in the rate of inflation
ii. **Deflation**: Persistent decrease in price level (negative inflation)
iii. **Reflation**: Price level increases when economy recovers from recession
   Based on value of inflation
iv. **Creeping inflation** – If rate of inflation is low (upto 3%)
v. **Walking/Trotting inflation** – Rate of inflation is moderate (3-7%)
vi. **Running/Galloping inflation** – Rate of inflation is high (>10%)
vii. **Runaway/Hyper Inflation** – Rate of inflation is extreme
viii. **Stagflation**: Inflation + Recession (Unemployment)
ix. **Suppressed / Repressed inflation**: Aggregate demand > Aggregate supply.
   Here govt will not allow rising of prices.
x. **Open inflation**: Situation where price level rises without any price control measures by the government.

xi. **Core inflation**: Based on those items whose prices are non-volatile.

xii. **Headline inflation**: All commodities are covered in this.

xiii. **Structural inflation**: Due to structural problems like infrastructural bottlenecks.

**Stagflation**:

- Stagflation is a situation where an economy faces both high inflation and low growth (and high unemployment).
- The root cause for Stagflation is attributed to a drastic fall in consumer demand and it is possible because of the supply side issues.
- Retail Inflation: Highest in Vegetable > Pulses and Products > Meat and Fish > Egg.
- **“Phillips Curve”**: there is an inverse relationship between inflation and unemployment. Hence policy makers are advised to maintain a certain inflation rate to ensure that unemployment is kept to a minimum and the economy is operating at full capacity.

**What causes Inflation?**

- Inflation is mainly caused either by demand Pull factors or Cost Push factors. Apart from demand and supply factors, Inflation sometimes is also caused by structural bottlenecks and policies of the government and the central banks.
- Therefore, the major causes of Inflation are:
- Demand Pull Factors (when Aggregate Demand exceeds Aggregate Supply at Full employment level).
- Cost Push Factors (when Aggregate supply increases due to increase in the cost of production while Aggregate demand remains the same).
- Structural Bottlenecks (Agriculture Prices fluctuations, Weak Infrastructure etc.)
- Monetary Policy Intervention by the Central Banks.
- Expansionary Fiscal Policy by the Government.

**How to measure Inflation?**

1) **Consumer Price Index (CPI)**

- It is a measure of change in retail prices only of goods and services. It is calculated on a monthly basis.
- It is used as an indicator of inflation, a tool for monitoring price stability and...
as a deflator in national accounts.

- The Dearness allowance of Govt employees and wage contracts between labour and employer is based on CPI.
- CPI is calculated by Laspeyre's index = [Total cost of a fixed basket of goods and services in the current period * 100] divided by Total cost of the same basket in the base period.
- CPI consists of services like housing, education, medical care, recreation etc.
- Presently the CPIs are:

  1. CPI (IW): Industrial workers; CPI (AL): Agricultural Labourers and; CPI (RL): Rural Labourers. They are occupation specific and compiled by Labour Bureau.
  2. CPI (Urban); CPI(Rural) and CPI (Combined): Have wider coverage and are compiled by CSO (now NSO). CPI for Urban Non Manual Employees was earlier computed by CSO but discontinued since 2008.

- RBI uses CPI-combined as the sole inflation measure for monetary policy.
- Price data are collected from selected towns by the Field Operations Division of NSSO and from selected villages by the Department of Posts.
- NREGA wages are currently linked with CPI (Agriculture Labour) but now Government has decided to index it to a new CPI (Rural).

  1. CPI (R) is wider and covers more non food items like Insurance, Health and Education. CPI (AL) includes more food items.
  2. Hence CPI (R) reflects better rural consumption basket compared to CPI (AL).
  3. A living wage should include health, education and insurance besides base essentials.

**Wholesale Price Index (WPI)**

- It is aka Point to Point Inflation.
- WPI measures the average change in the prices of only goods (not services) at wholesale level. Base year 2011-12. 697 goods.
- Components and Prices tracked are:

  1. Manufactured products (64%): Ex factory price.
  2. Primary Articles (23%): Mandi price for Agri commodities.
  3. Fuel and Power (13%): Ex mines price for minerals.

- Calculated by Office of Economic Advisor (OEA), DPIIT, Ministry of Commerce
- The main uses of WPI are the following:
  1. Check Inflation.
  2. It is used as a deflator for many sectors including GDP by CSO.
3. WPI is also used for indexation by users in business contracts.
4. Global investors also track WPI as one of the key macro indicators for their investment decisions.
5. It includes manufacturing items and intermediate goods.

- Revision of Base Year to 2011-12 in 2017
  1. It is a regular exercise to capture structural changes in the economy and improve the quality and coverage of the index.
  2. In 2017, the Base year was revised (7th time) from 2004-05 to 2011-12 (based on Dr. Saumitra Chaudhuri Committee) to align it with other macroeconomic indicators like GDP and IIP.
  3. It also changed the basket of commodities and assigned new weights to the commodities.
  4. WPI with Base year 2011-12 doesn’t include taxes to remove the impact of fiscal policy.
  5. Now, WPI series is closer to Producer Price Index which reflects the change in average prices of goods & services either as they leave or enter the production process. It measures changes in the prices that producers get.

What is the difference between WPI & CPI?

1. WPI, tracks inflation at the producer level and CPI captures changes in prices levels at the consumer level.
2. Both baskets measure inflationary trends (the movement of price signals) within the broader economy, the two indices differ in which weightages are assigned to food, fuel and manufactured items.
3. WPI does not capture changes in the prices of services, which CPI does.

Headline Retail Inflation vs Core Inflation

- **Headline inflation** is the raw inflation figure reported through the Consumer Price Index (CPI) that is released by CSO. The headline figure is not adjusted for seasonality or for the often-volatile elements.
- **Core inflation** removes the CPI components that can exhibit large amounts of volatility from month to month, which can cause unwanted distortion to the headline figure. The most commonly removed factors are those relating to the cost of food and energy.

Ujjit Patel Committee on Monetary Policy Committee

- The expert committee was headed by Ujjit R. Patel, Deputy Governor of the Reserve Bank of India.
The committee felt that inflation should be the nominal anchor for the monetary policy framework. The nominal anchor or the target for inflation should be set at 4 per cent with a band of +/- 2 per cent around it. “It should be set by the RBI as its predominant objective of monetary policy in its policy statements,” the report said.

The nominal anchor should be communicated without ambiguity, so as to ensure a monetary policy regime shift away from the current approach to one that is centred around the nominal anchor. “The nominal anchor should be defined in terms of headline CPI inflation, which closely reflects the cost of living and influences inflation expectations relative to other available metrics,” the committee felt.

“This target should be set in the frame of a two-year horizon that is consistent with the need to balance the output costs of disinflation against the speed of entrenchment of credibility in policy commitment,” the report said.

Since food and fuel account for more than 57 per cent of the CPI on which the direct influence of monetary policy is limited, the commitment to the nominal anchor would need to be demonstrated by timely monetary policy response to risks from second-round effects and inflation expectations in response to shocks to food and fuel, the committee pointed out.

The committee asked the Central Government to ensure that the fiscal deficit as a ratio to GDP (gross domestic product) is brought down to 3.0 per cent by 2016-17.

Monetary policy committee

1. The panel felt that the monetary policy decision-making should be vested with a monetary policy committee (MPC).
2. It went on to recommend that the Governor of the RBI should be the Chairman of the MPC.
3. It felt that the Deputy Governor in-charge of monetary policy could be the Vice-Chairman.
4. The Executive Director in charge of monetary policy could be its member. It could have two external members.
5. The full-time external members would have full access to information/analysis generated within the Reserve Bank. “
6. The term of office of the MPC could be three years, without prospect of renewal.
7. Each member of the MPC will have one vote with the outcome determined by majority voting, which has to be exercised without abstaining. Minutes of the proceedings of the MPC will be released with a lag of two weeks from the date of the meeting,” the committee said.
Monetary Policy Committee, 2015

- 1st time suggested by Y V Reddy Committee. Then Tarapore Committee (2006); Percy Mistry Committee (2007); Raghuram Rajan Committee (2009) and FSLRC Committee (2013) and Urjit Patel Committee (2013) talked about MPC.
- Monetary Policy Committee (MPC) was constituted as per Section 45ZB under the RBI Act of 1934 by the Central Government.
- RBI Governor is the head of MPC.
- There are 2 core tasks = Inflation targeting + Policy rate.
- The major four objectives of the Monetary Policy are mentioned below:
  - To stabilize the business cycle.
  - To provide reasonable price stability.
  - To provide faster economic growth.
  - Exchange Rate Stability.
- Center determines inflation target every 5 years. RBI maintains it.
- 6 members of MPC =
  - RBI Governor, Deputy Governor related to MPC, 1 RBI Board member.
  - 3 Govt nominees appointed through Selection Committee consisting of Cabinet Secretary head, RBI Governor, Secretary of Department of Economic Affairs, Ministry of Finance and 3 experts.
- Tenure is 4 years and they are not eligible for reappointment.
- Decision is binding on RBI.
- Quorum = 4 vote including RBI Governor.

Source: IE

Rajasthan to start a Vedic Education Board

Rajasthan to start a Vedic Education Board

- Months after announcing a major overhaul of India’s education system through the National Education Policy (NEP 2020), the Centre is mulling setting up a Vedic education board for schools apart from the already existing CBSE board.
- In this connection, it is important to note that in January 2019, the education ministry had already permitted the Baba Ramdev-run Patanjali group to set
up a Bhartiya Shiksha Board (BSB) on ‘Indian knowledge systems’ — making it the first private education board to receive the Centre’s nod.

- The decision was taken in a meeting of the governing council of the Maharshi Sandipani Rashtriya Vedavidya Pratishthan (MSRVP) – a fully-funded autonomous body under the HRD Ministry working on promotion of ‘vedvidya’ – chaired by former HRD minister Prakash Javadekar.
- The proposal to integrate Vedic education in the school curriculum was first mooted by former HRD minister Prakash Javadekar shortly after the Maharashtra International Education Board was set up in 2018 under the leadership of former chief minister Devendra Fadnavis.
- While integration of a new discipline into the core curriculum is welcome, schools should have the flexibility to choose based on their institutional goals and vision.

What is the news?

- The Congress government in Rajasthan will set up a Vedic Education and Sanskar Board to revive the knowledge of ancient Sanskrit scriptures and connect the learnings of the Vedas with science and yoga. The board is likely to be set up in the coming four to five months.
- Minister of State for Sanskrit Education Subhash Garg said here on Monday that a committee appointed to define the aims, objectives and functioning of the board had submitted its report to the State government. Based on the panel’s recommendations, the board will adopt education modules revolving around Vedic knowledge.
- The ruling Congress had promised the establishment of the Vedic Education and Sanskar Board as well as steps to promote Sanskrit language and education in its manifesto for the 2018 State Assembly election.

Source: TH
China is in the middle of a significant modernisation and expansion of its nuclear weapon inventory, and India and Pakistan also appear to be expanding their nuclear arsenals, according to Swedish think tank Stockholm International Peace Research Institute (SIPRI) Year Book 2021.

The overall number of warheads in global military stockpiles now appears to be increasing, a worrisome sign that the declining trend that has characterised global nuclear arsenals since the end of the Cold War has stalled.

According to the year book, India possessed an estimated 156 nuclear warheads at the start of 2021, compared with 150 at the start of last year, while Pakistan had 165 warheads, up from 160 in 2020.

China’s nuclear arsenal consisted of 350 warheads, up from 320 at the start of 2020.

The nine nuclear armed states — the U.S., Russia, the U.K., France, China, India, Pakistan, Israel and North Korea — together possessed an estimated 13,080 nuclear weapons at the start of 2021.

Russia and the U.S. together possessed over 90% of global nuclear weapons, SIPRI said.

A report by the International Institute for Strategic Studies (IISS), London, in May titled ‘Nuclear Deterrence and Stability in South Asia: Perceptions and Realities’ said that chance played an important ameliorative role in the India-Pakistan crisis of February 2019 and the two countries “risk stumbling into using their nuclear weapons through miscalculation or misinterpretation in a future crisis.”

“India and Pakistan are seeking new technologies and capabilities that dangerously undermine each other’s defence under the nuclear threshold,” said the report.

It said China’s evolving profile as a nuclear-weapons state was compounding India’s security challenges.

Source: TH
Dozee, a Department of Biotechnology (DBT) and its PSU Biotechnology Industry Research Assistance Council (BIRAC) funded start-up offers 'contact-free monitoring of the vital parameters of the patients on a normal bed.'

About DBT

- The Department of Biotechnology (DBT), Ministry of Science and Technology, boosts and augments the development of the biotechnology ecosystem in India through its expansion and application in agriculture, healthcare, animal sciences, environment, and industry.

About BIRAC

- Set up by the Department of Biotechnology (DBT), Government of India, Biotechnology Industry Research Assistance Council (BIRAC), is a not-for-profit Section 8, Schedule B, Public Sector Enterprise, which acts as an Interface Agency to improve and encourage the evolving biotechnology industry to execute strategic research and development activities in context to Nation's product development needs.

- The innovation has already resulted in the upgrading of over 4,000 hospital beds for Step-Down ICUs across 35 districts in India.
- In the last months, Dozee has already served over 30,000 patients, saved over 65,000 nursing hours and prompted over 750 timely ICU transfers through its Early Warning System.
- Dozee is an easy to deploy solution to upgrade the normal hospital bed to a Step-Down-ICU.
- It records the micro-vibrations produced in the heart-beat and respiration cycle using Ballistocardiography when placed under a mattress.
- The device, using Artificial Intelligence algorithms, converts this data into vital signs like heart rate, respiration rate, and blood pressure.
- The device has 98.4% proven accuracy as medical-grade products. The device also records Oxygen saturation and ECG using accessories. The data
can also be accessed remotely on any smart phone via an app. The data can also be monitored on a central monitoring dashboard.

- Dozee also features an AI-powered Early Warning System that sends proactive alerts to clinicians, thereby reducing the nursing staff's workload and improving patient outcomes.
- The system also provides ICU-grade monitoring to every bed with no inconvenience of wires or electrodes to the patient, thus improving the overall administration for patients' care.
- Through its Million ICU initiative, Dozee aims to improve public healthcare by utilising transformative technology to provide high-quality care to every individual.
- The company aims to upgrade 50,000 public hospital beds into Step-Down ICUs by raising CSR funds from several Indian and International organisations.
- This initiative will enable the hospitals to respond to the COVID-19 crisis and usher in a rapid and long-term transformation in India's public healthcare infrastructure.
- Dozee has been supported in their entrepreneurial journey by DBT, BIRAC through various initiatives like BIG, SEED, LEAP, BioNEST, and others.

Source: PIB
Delhi HC and UAPA

What is the news?

- Notwithstanding the fact that the definition of ‘terrorist act’ in Unlawful Activities (Prevention) Act (UAPA) is “wide and even somewhat vague”, the phrase ‘terrorist act’ cannot be permitted to be casually applied to criminal acts that fall squarely within the definition of conventional offences, the Delhi High Court.
- A bench of Justice Siddharth Mridul and Justice Anup Jairam Bhanbhani said the word ‘terrorism’ or ‘terror’ has nowhere been defined in the UAPA.
- Hence, the court must be careful in employing the definitional words and phrases used in section 15 (of the UAPA that defines ‘terrorist act’) in their absolute literal sense or use them lightly in a manner that would trivialise the extremely heinous offence of ‘terrorist act’, without understanding how terrorism is different even from conventional, heinous crime, the bench said.
- The High Court’s observation came while granting regular bail to JNU students Natasha Narwal and Devangana Kalita, and Jamia Millia Islamia student Asif Iqbal Tanha, arrested in connection with the north-east Delhi riots.

Unlawful Activities Prevention Act, 1967

UAPA’s origin

- The ‘terrorist act’, including conspiracy and act preparatory to the commission of a terrorist act, were brought within the purview of UAPA by an amendment made in 2004, on the heels of Parliament repealing Prevention of Terrorism Act (POTA).
- POTA’s precursor, the Terrorist & Disruptive Activities (Prevention) Act (TADA) was repealed in 1995.
- The High Court said the phrase ‘terrorist act’ must get its colour and flavour from the problem of terrorism as was earlier addressed by the Parliament under TADA and POTA.
Unlawful Activity refers to any action taken by individual or association whether by action/ words spoken/ written/signs to questions disrupts the territorial integrity and sovereignty of India.

It is an enhancement of TADA, 1995 and POTA, 2004. It was enacted during Indira Gandhi.

The National Integration Council (headed by PM) appointed a Committee on National Integration and Regionalisation.

Pursuant to this Committee, 16th CAA, 1963 was enacted to impose, by law, reasonable restrictions in Art 19 (Speech, Association, Assembly) in the interests of integrity and sovereignty of India.

And to implement the provisions of 1963 Constitution Amendment Act, Unlawful Activities (Prevention) Act was enacted in 1967.

<table>
<thead>
<tr>
<th>UAPA, 1967</th>
<th>NIA Amendment Act, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It aims at effective prevention of unlawful activities across India and abroad.</td>
<td>1. It amended Schedule 4 of UAPA which will allow NIA to designate Individuals as terrorist.</td>
</tr>
<tr>
<td>2. Its main objective was to provide powers to Central Agencies and States to deal with terrorist activities directed against integrity and sovereignty of India.</td>
<td>2. It empowers DG of NIA to seize properties (which previously required permission from DGP).</td>
</tr>
<tr>
<td>3. Center may designate an organization as a terrorist organization.</td>
<td>3. It allows NIA officers (Inspector and above) to investigate the cases. Earlier only DSP or ACP and above could investigate.</td>
</tr>
<tr>
<td>4. It is applicable across the entire country.</td>
<td>4. MHA declared 4 individuals as terrorists</td>
</tr>
<tr>
<td>5. Any Indian or Foreign National charged under UAPA is liable for punishment under UAPA, 1967.</td>
<td>1. Jaish-e-Mohammed chief Masood Azhar</td>
</tr>
<tr>
<td>6. It is applicable even if the crime is committed on a foreign land, outside India.</td>
<td>2. Lashkar e Taiba - Hafiz Saeed, Rehman Lakhvi</td>
</tr>
<tr>
<td>7. Persons on ships and aircrafts registered in India.</td>
<td>3. Dawood Ibrahim</td>
</tr>
</tbody>
</table>

Jaish-e-Mohammed chief Masood Azhar
2. Lashkar e Taiba - Hafiz Saeed, Rehman Lakhvi
3. Dawood Ibrahim
UAPA Amendments

- The UAPA – an enhancement on the TADA (Terrorist and Disruptive Activities (Prevention) Act), which was allowed to lapse in 1995 and the Prevention of Terrorism Act (POTA) was repealed in 2004 — was originally passed in 1967 under the then Congress government led by former Prime Minister Indira Gandhi.
- Eventually amendments were brought in under the successive United Progressive Alliance (UPA) governments in 2004, 2008 and 2013.

- PT Shot: At present, NIA is functioning as the Central Counter Terrorism Law Enforcement Agency in India established under NIA Act 2008.

About Unlawful Activities [Prevention] Act (UAPA):

- **UAPA** was introduced in 1967 to target secessionist organizations.
  - It is primarily an anti-terror law aimed at preventing certain unlawful activities of individuals and associations.
- **Investigation:** The cases under the UAPA are investigated by the State police and the National Investigation Agency (NIA).
- **Bail:** Under the act, getting bail is rare. The investigating agency has up to **180 days** to file a charge sheet.
- It is considered to be the predecessor of laws (now repealed) Terrorist and Disruptive Activities (Prevention) Act (TADA) and Prevention of Terrorism Act (POTA).

**Key Provisions of the Act:**

- The Act assigns absolute power to the central government. It can declare an activity as unlawful by way of an Official Gazette.
- The act has the death penalty and life imprisonment as the highest punishments.
- Under the act, both Indian and foreign nationals can be charged. It will be applicable to the offenders in the same manner, even if the crime is committed on a foreign land outside India.
- The investigating agency can file a charge sheet in maximum 180 days after the arrests. This duration can be extended further after information to the court.

**2004 amendment:**
The act was amended in 2004. It added “terrorist act” to the list of offences, to ban organisations for terrorist activities.

2019 amendment:

- The amendment empowers the Central Government to designate individuals as terrorists on certain grounds.
- It empowers the Director-General, National Investigation Agency (NIA) to grant approval of seizure or attachment of property when the case is under investigation by the agency.
- It also empowers the officers of the NIA, of the rank of Inspector or above to investigate cases of terrorism in addition to those conducted by the DSP or ACP or above rank officer in the state.

Data on UAPA Cases

- There is 72% increase in the number of persons arrested under the UAPA (Unlawful Activities [Prevention] Act in 2019 compared to year 2015, data provided by the Ministry of Home Affairs (MHA).
- As many as 1,948 persons were arrested under the UAPA in 1,226 cases registered across the country in 2019.
- In 2019, the highest number of such cases were registered in Manipur (306), followed by Tamil Nadu (270), Jammu & Kashmir (255), Jharkhand (105) and Assam (87) cases. While in 2017 (below image) shows that Manipur was followed by J&K, Assam, Indicating Sharp rise in cases in Tamil Nadu, Jharkhand.
- The highest number of arrests were made in Uttar Pradesh (498), followed by Manipur (386), Tamil Nadu (308), Jammu & Kashmir (227) and Jharkhand (202).
- NCRB data reveals 5,922 UAPA arrests between 2016 and 2019 against a mere 132 convictions. At 2019’s start, 3,908 UAPA cases were pending investigation from previous years in which police filed 257 charge sheets in 2019.
- From 2015 till 2018, the cases registered under the Act annually stood at 897, 922, 901 and 1,182 respectively, while the number of arrests was 1,128, 999, 1,554 and 1,421.
- Meanwhile, against 1,876 cases pending trial from previous years and 485 cases sent for trial in 2019, courts completed trial in just 113 cases, with a
29% CONVICTION RATE.

- Cases under the UAPA are investigated by the State police and the National Investigation Agency (NIA). As far as the NIA is concerned, so far 48 special courts have been constituted across the country for the speedy trial of terror-related cases.

**National Investigating Agency**

- NIA is a Central agency established by NIA Act, 2008 (after Mumbai attacks) to combat terror in India.
- It comes under the Ministry of Home Affairs.
- NIA acts as the Central Counter Terrorism Law Enforcement Agency.
- It is authorised to investigate any terror related matter without special permission of the States.
- The founding DG of NIA was Radha Vinod Raju. Currently Y C Modi is the chief.
- Functions
  1. To investigate terror related cases or to make strategy to combat terrorism.
  2. To study and analyse laws related to terrorism in other countries and evaluate and amend Indian laws.
  3. To investigate and prosecute offences affecting sovereignty, integrity, security of the State.
  4. To have friendly relations with Foreign countries and International org.
  5. To implement International treaties, agreements and conventions.
- NIA has banned JeM, LeT, PLA, SIMI, Babbar Khalsa International, ULFA, NDFB (Assam), LTTE, TNLA etc.
- **NIA (Amendment), 2019**
  1. Ambit of NIA increased to investigate Human Trafficking, Counterfeit currency, Manufacture or sale of prohibited arms, Cyber Terrorism and Offenses under Explosive Substances Act, 1998.
  2. Jurisdiction of NIA increased. They can investigate offences committed outside India. It will be subject to international treaties and domestic laws of other countries.
  3. Center and State can designate Session Courts as Special Courts to conduct trials under NIA Act. This will be done in
Defining ‘terrorism’

- To understand the concept and construction of ‘terrorism’, Delhi High Court referred to various judgments of the Supreme Court where the issue has already been dealt with.
- “Terrorism is one of the manifestations of increased lawlessness and cult of violence... A ‘terrorist’ activity does not merely arise by causing disturbance of law and order or of public order. The fallout of the intended activity must be such that it travels beyond the capacity of the ordinary law enforcement agencies to tackle it under the ordinary penal law,” the Supreme Court had said in Hitendra Vishnu Thakur versus State of Maharashtra case.
- In the same judgment, the Supreme Court said, “Every ‘terrorist’ may be a criminal but every criminal cannot be given the label of a ‘terrorist’ only to set in motion the more stringent provisions of TADA.”
- The High Court said, in its opinion, “The intent and purport of the Parliament in enacting the UAPA, and more specifically in amending it in 2004 and 2008 to bring terrorist activity within its scope, was, and could only have been, to deal with matters of profound impact on the ‘Defence of India’, nothing more and nothing less.”
- “Foisting extremely grave and serious penal provisions engrafted in sections 15, 17 and 18 UAPA frivolously upon people, would undermine the intent and purpose of the Parliament in enacting a law that is meant to address threats to the very existence of our Nation,” the court cautioned.
- It reminded that a sacrosanct principle of interpretation of penal provisions is that they must be construed strictly and narrowly, to ensure that a person who was not within the legislative intendment does not get roped into a penal provision.
- “Also, the more stringent a penal provision, the more strictly it must be construed,” the High Court remarked pointing at the use of the stringent provision under UAPA against the three students in the north-east Delhi riots case.
China- Taiwan issue
GS-II | 16 June,2021

China- Taiwan issue

Taiwan reports largest incursion by Chinese forces

- As many as 28 Chinese air force aircraft, including fighters and nuclear-capable bombers, entered Taiwan’s air defence identification zone (ADIZ) on Tuesday, the island’s government said. It is the largest reported incursion to date.
- Taiwan has complained over the last few months of repeated missions by China’s air force near the self-ruled island, concentrated in the southwestern part of its air defence zone near the Taiwan-controlled Pratas Islands.
- The latest Chinese mission involved 14 J-16 and six J-11 fighters, as well as four H-6 bombers, which can carry nuclear weapons, and anti-submarine, electronic warfare and early warning aircraft, said Taiwan’s Defence Ministry.
- It was the largest daily incursion since the Ministry began regularly reporting Chinese Air Force activities in Taiwan’s ADIZ last year.
- The Ministry said Taiwanese combat aircraft were dispatched to intercept the Chinese aircraft and missile systems were also deployed to monitor them.

Historical Background

- The first known settlers in Taiwan are Austronesian tribal people thought to have come from modern day southern China.
- After a brief spell as a Dutch colony (1624-1661) Taiwan was unquestionably administered by China from 1683 to 1895.
- At the beginning of the 17th Century, significant numbers of migrants started arriving from China, often fleeing turmoil or hardship.
- The descendants of these migrated people now make up by far the largest population group in Taiwan.
- After the First Sino-Japanese War in 1895, Taiwan was under the control of Japan.
- But with the end of World War II, the Republic of China (ROC) began ruling Taiwan with the support of its allies- the USA and the UK.
China initially had two political parties— the Kuomintang (KMT) or the ROC and the Chinese Communist Party (CCP).

However, the KMT had to flee to Taiwan after the Chinese Civil War as the communist forces led by Mao Zedong became victorious.

The undemocratic policies combined with wartime corruption made the Republic of China Government vulnerable to the Communist threat, while the Chinese Communist Party (CCP) gained popularity due to their early efforts on land reform and had the popular support of the peasants for its unflagging efforts to fight against the Japanese invaders.

KMT leader Chiang Kai-shek and a few from his party fled to Taiwan in 1949.

China considers Taiwan part of its territory to be taken control of by force if necessary. But Taiwan's leaders say that Taiwan is a sovereign state.

After 1949, KMT dominated Taiwan's politics for a long time until the emergence of the Democratic Progressive Party (DPP).

The DPP grew out of the Taiwanese democracy movement that rebelled against the Kuomintang (KMT) dictatorship and advocates a Taiwan-centred national identity.

Contact with China was completely severed for a long time.

After decades of hostile intentions and angry rhetoric, relations between China and Taiwan started improving in the 1980s.

China put forward a formula, known as "one country, two systems", under which Taiwan would be given significant autonomy if it accepted Chinese reunification.

One-China Policy:

- It recognizes that there is only one China, and that Taiwan is a part of that.
- Any country wishing to establish diplomatic relations with Beijing must acknowledge there is only “One China” and sever all formal ties with Taiwan.
- The One China policy is also different from the “One China principle”, which insists that both Taiwan and mainland China are inalienable parts of a single “China.”

- Taiwan rejected the Chinese proposal of “one country, two systems”
There were also limited talks between the two sides' unofficial representatives, though Beijing's insistence that Taiwan's Republic of China (ROC) government is illegitimate prevented government-to-government contact.

China's implementation of a national security law in Hong Kong in 2020 was seen by many as a yet another sign that Beijing was becoming significantly more assertive in the region.

What is the “one country, two systems” approach?

- The principle of “one country, two systems” was first proposed by Deng Xiaoping as a way to restore the relationship between the communist mainland with historically Chinese territories (Taiwan, Hong Kong and Macau)—that had capitalist economies.
- This system was initially proposed to Taiwan.
- The Taiwanese had demanded that if they were to accept the one country, two systems approach:
  1. The People’s Republic of China (PRC) should be renamed as the Republic of China and,
  2. Democratic elections would have to be conducted in mainland China. This was however not accepted by mainland China.
- He had suggested that there would be only one China, but the distinct Chinese regions such as Hong Kong and Macau could retain their own economic and administrative systems, while the rest of China uses the socialism with Chinese characteristics system.
- In 1984 the concept was enshrined in the Sino-British Joint Declaration, in which the two countries agreed that Britain would hand over sovereignty of Hong Kong to China.
- China is responsible for defence and foreign affairs but Hong Kong runs its own internal security.

What are the Three Linkages?
It was a proposal by the PRC in 1979, to open up three direct links between the Taiwan Straits and China, which are: Postal services, Trade and Transportation.

The “Three Links” were officially established in 2008, in an agreement between the Taiwan-based Straits Exchange Foundation (SEF) and China’s Association for Relations Across the Taiwan Strait (ARATS).

Taiwan-China relations

- Taiwan is the most populous state that is not a member of the United Nations and the largest economy outside the UN.
- Taiwan is Asia’s 5th largest economy.
- It is a global leader in chip manufacture and the second-largest manufacturer of IT hardware, etc.
- China is Taiwan’s top trading partner, with trade totaling $226 billion in 2018.
- Taiwan runs a large trade surplus with China.
- While Taiwan is self-governed and de facto independent, it has never formally declared independence from the mainland.
- Under the “one country, two systems” formula, Taiwan would have the right to run its own affairs; a similar arrangement is used in Hong Kong.
- Taiwan is a member of the World Trade Organization, Asia-Pacific Economic Cooperation and Asian Development Bank under various names.

Role of USA in China-Taiwan relations

- The US is by far Taiwan's most important friend, and its only ally.
- In 1979, US ended diplomatic recognition of Taiwan in order to concentrate on burgeoning ties with China.
- However, it later revoked and passed the Taiwan Relations Act, which promises to supply Taiwan with defensive weapons, and stressed that any attack by China would be considered of "grave concern" to the US.
- The Taiwan Travel Act aims to promote greater engagement between US and Taiwan.
- US has also sought to leverage Taiwan to pressure China in the U.S.’s ongoing trade war.

Why Taiwan is important for India?

- Taiwan is the world’s leading producer of semiconductors and other electronic components.
- The Taiwan Semiconductor Manufacturing Company (TSMC) has more than 55 per cent of the global market share in the production of high-end custom-
made chips.
- Of the two rival companies that have survived, US-based Intel is in trouble and Korea’s Samsung has challenges of its own.
- There will be no generation of data without the semiconductors.
- It might be more accurate to say that “semiconductors are the new oil” and their production is increasingly dominated by Taiwan and the TMSC.
- Taiwan’s position as a semiconductor superpower opens the door for more intensive strategic-economic cooperation between Delhi and Taipei.

India’s Stand on the Issue:

- Since 1949, India has accepted the “One China” policy that accepts Taiwan and Tibet as part of China.
- However, India uses the policy to make a diplomatic point, i.e., if India believes in “One China” policy, China should also believe in a “One India” policy.
- Even though India has stopped mentioning its adherence to One China policy in joint statements and official documents since 2010, its engagement with Taiwan is still restricted due to the framework of ties with China.
- India and Taiwan do not have formal diplomatic relations but since 1995, both sides have maintained representative offices in each other’s capitals that function as de facto embassies.

Way forward

- Delhi must begin to deal with Taiwan as a weighty entity in its own right that offers so much to advance India’s prosperity.
- Delhi does not have to discard its “One-China policy” to recognise that Taiwan is once again becoming the lightning rod in US-China tensions.
- Consider the question “India needs to explore the opportunities in relationship with Taiwan even as it pursues and sticks to its One China policy. Comment.

Conclusion

As Taiwan becomes the world’s most dangerous flashpoint, the geopolitical consequences for Asia are real. Although Delhi has embraced the Indo-Pacific maritime construct, it is yet to come to terms with Taiwan’s critical role in shaping the strategic future of Asia’s waters.
CCEA approved the proposal to hike subsidy rates for Phosphorus and Potassium based fertilizers

- The Cabinet Committee on Economic Affairs has approved the proposal to hike subsidy rates for phosphorus and potassium-based fertilizers by 140% in a bid to provide relief to farmers as the kharif sowing season begins.
- The estimated additional subsidy burden is around ₹14,775 crore, with the Centre emphasising that this is a one-time measure as part of COVID-19 relief.
- Unlike urea, where the Centre sets a fixed maximum retail price, non-urea fertilizer prices are decontrolled, with the Centre fixing nutrient-based subsidy rates.
- So far, a 50 kg bag of di-ammonium phosphate (DAP), the fertilizer most popular with Indian farmers after urea, was sold at ₹1,200, including a subsidy of about ₹500.
- However, the bull run in the global commodity markets has seen a surge in prices of the imported raw materials as well as the finished fertilizer. In early April, a number of Indian fertilizer companies hiked their DAP prices to ₹1,900 per bag.
- Farmers’ groups protested against the ₹700/bag hike, pointing out that their input costs for the kharif season would spiral out of control.

Fertilizer Industry in India

- It is 1 of the 8 core industries. Fertilizer has the minimum share in Index of Core Industries.
- India is the 2nd largest consumer of Urea fertilizers after China. India also ranks 2nd in the production of nitrogenous fertilizers and 3rd in phosphatic fertilizers. Potash requirement is met through imports since we have limited reserves of potash. There are 2 types of Fertilizers
  1. **Primary Fertilizers**: classified on the basis of nutrients they supply to soil like N:P:K:
     1. Nitrogenous (Urea),
     2. Phosphatic (di-ammonium phosphate - DAP) and
     3. Potassic (muriate of potash (MOP) fertilizers.
  2. **Secondary Fertilizers** includes Calcium, Magnesium and Sulphur.
3. Micronutrients include Iron, Zinc, Boron, Chloride etc.
   - Fertilizer subsidy (Food > Fertilizer > Petroleum > Interest payments)

1. Earlier no Fertilizer subsidy was paid till 1977. Oil crisis of 1973 led to increase in Fertilizer prices leading to a decline in consumption and an increase in food prices. In 1977, Govt subsidized manufacturers.
2. After 1991 crisis, Govt decontrolled the import of Phosphate and Potash but Urea imports is restricted.

Urea Production and Pricing mechanism

- Urea is the source of Nitrogenous fertilizer and it is heavily subsidized by Center. Today Urea is the only fertilizer which remains controlled.
- CCEA approved continuation of Urea Subsidy Scheme upto 2020
  1. It is a part of Central Sector Scheme. Urea price will be same till 2020.
  2. Now DBT Scheme is approved for fertilizer subsidy to urea manufacturers and importers. It also includes imported Urea subsidy which is directed towards import to bridge the gap between demand and indigenous production of urea. It also includes freight subsidy for movement of urea.
  3. Benefits
     1. DBT will ensure timely payment of subsidy to urea manufacturers. Fertilizer Co. leading to timely availability of urea to farmers.
     2. This will reduce the leakage of fertilizer subsidy and black marketing.
     3. Ceiling might be put to reduce the overuse of Nitrogenous fertilizers.
- Subsidy to Fertilizer manufacturer/ importer = Farm Gate price - MRP paid by Farmers.

- New Urea Policy of 2015 (till 2019-20)
  1. With the objective of maximizing indigenous urea production, promoting energy efficiency in urea production and rationalize subsidy.
  2. It is applicable to existing 25 gas based units.
  3. It ensures timely payment to urea manufacturers resulting in timely availability of urea to farmers.

- Urea is given at statutorily controlled price = Rs. 5360/ MT. Other charges for Neem coating.
- Center plans to ease control on the retail prices of Urea and wants to make it more targeted.
Earlier Mandatory Neem coated urea production was done to slow down the dissolution of nitrogen into soil, resulting into less nutrient requirement. Govt is also planning over fixing a Nutrient Based Subsidy (NBS) rate for Urea to promote balanced use of fertilizers and bring efficiency in industry.

CCEA approved continuation of Nutrient Based Subsidy scheme till 2020

- Under this scheme a fixed amount of subsidy decided on annual basis, is provided to fertilizer companies (other than Urea) depending on its nutrient content. It is applicable to 22 fertilizers (other than Urea).
- Govt announces a fixed rate of subsidy on each nutrient of subsidized Nitrogen, Phosphate, Potash and Sulphur fertilizers. MRP is decided by considering international and domestic prices of P&K fertilizers, exchange rate and inventory level in the country.

Infrastructure

- Fertilizer Corporation of India Limited: has 4 units at Sindri (Jharkhand); Gorakhpur (UP); Ramagundam (AP) and Talcher (Odisha) and Korbe (Chattisgarh).
- Hindustan Fertilizer Corporation Limited: at Barauni (Bihar); Durgapur (WB) and Namrup (Assam).
- Rashtriya Chemicals and Fertilizers Limited, Trombay.
- National Fertilizers Limited at Bhatinda (Punjab) and Panipat (Haryana).

Source: TH

Deep Ocean Mission

The Union Cabinet has approved the long-pending deep ocean mission, which among other things involves developing a submersible vehicle that will allow a crew to plunge 6,000 metres into the ocean and hunt the floor for precious...
• The Deep Ocean Mission was in 2019 envisaged as a ₹8,000 crore mission.
• India has been allotted a site of 75,000 square kilometres in the Central Indian Ocean Basin (CIOB) by the UN International Sea Bed Authority for exploitation of polymetallic nodules (PMN).
• These are rocks scattered on the seabed containing iron, manganese, nickel and cobalt.
Funding: In the works since 2018, the mission is expected to cost ₹4,077 crore over the next five years. The estimated cost for the first phase of three years (2021-24) would be ₹2,823.4 crore.

Nodal Ministry: The Ministry of Earth Sciences (MoES) will be the nodal Ministry implementing this multi-institutional mission.
UPSC "PT" DNA (Daily News Analysis)

DIGGING DEEP

Potato-shaped polymetallic nodules are a source of metals such as nickel, cobalt, copper, manganese and iron.

HOW WILL IT BE DONE?
1. Survey identifies areas where polymetallic nodules are present.
2. Ship carrying integrated mining system (IMS) will be anchored at site.
3. Soil tester will be sent down to evaluate seabed soil properties for load bearing and shear strength.
4. A 12-tonne crawler will be sent to the seabed.
5. Cameras on crawler send images to the ship.
6. Pump sucks the nodule, transfers it to a crusher in crawler.
7. Crushed granules pumped to ship through a buffer.
8. Minerals segregated in ship and transported to land.

WHAT WILL BE MINED?
- Polymetallic nodules, a rock-like solid mass formed by accumulation of matter within sediments at the bottom of the sea.
- Iron, manganese, nickel, cobalt and copper are found in nodules.
- India to explore polymetallic nodules in the central Indian Ocean basin for 15 years.
- Estimated polymetallic nodule resource potential is 380 million tonnes containing 4.7 million tonnes of nickel, 4.29 million tonnes of copper, 0.55 million tonnes of cobalt and 92.59 million tonnes of manganese.

FUTURE
- Mining equipment tested at 500m depth so far.
- First stage will be conducted by 2019-end with crawler for locomotion trials and pumping system at 6,000m depth.
- Prototype will be ready in 2022 and go through final tests.
There are 6 components to the programme:

- **Submersible Vehicle**: A manned submersible will be developed to carry 3 people to a depth of 6,000 metres in the ocean with a suite of scientific sensors and tools. An integrated mining system will be also developed for mining polymetallic nodules at those depths in the central Indian Ocean.

- **Ocean Climate Change Advisory Services**: The second component involves developing Ocean Climate Change Advisory Services, which entails developing a suite of observations and models to understand and provide future projections of important climate variables on seasonal to decadal time scales.

- **Flora and Fauna**: The next component is searching for deep sea flora and fauna, including microbes, and studying ways to sustainably utilise them.

- **Hydrothermal minerals**: The fourth component is to explore and identify potential sources of hydrothermal minerals that are sources of precious metals formed from the earth’s crust along the Indian Ocean mid-oceanic ridges.

- **Desalination and OTEC**: The fifth component involves studying and preparing detailed engineering design for offshore Ocean Thermal Energy Conversion (OTEC) powered desalination plants.

- **Expertise**: The final component is aimed at grooming experts in the field of ocean biology and engineering. This component aims to translate research into industrial applications and product development through on-site business incubator facilities.

**Significance:**

- If this works, India will be among a handful of countries able to launch an underwater mission at such depths.

- The exploration studies of minerals will pave way for the commercial exploitation in the near future, as and when commercial exploitation code is evolved by the International Seabed Authority, an United Nations organisation.

- Being able to lay hands on a fraction of that reserve can meet the energy requirement of India for the next 100 years.

Source: TH
Illegal Mining in Meghalaya

- According to available government data, Meghalaya has a total coal reserve of 640 million tonnes, most of which is mined unscientifically by individuals and communities.
- In 2011–12, rat-hole mines produced about 10 million tonnes of coal. This large coal production in a small state had a devastating impact on the environment.

Some of the areas of Coal mining in Meghalaya are

- Ksan in Meghalaya’s East Jaintia Hills

What is a rat hole mine?
A rat-hole mine comprises a deep vertical shaft with narrow horizontal tunnels, two to four feet in dimension, dug on its sides. Miners (mostly child labors) go into these horizontal tunnels for hundreds of feet to take out coal. Primitive tools are used to build and operate these mines.
mines and accidents are common and most are not reported.  
- Rat hole mining involves digging of very small tunnels, usually only 3-4 feet high, which workers (often children) enter and extract coal.  
- The **National Green Tribunal (NGT)** banned it in **2014**, on grounds of it being unscientific and unsafe for workers. The state (Meghalayan) government has challenged the NGT ban in the Supreme Court.  
- Despite a ban, rat-hole mining remains a prevalent practice for coal mining in Meghalaya, where a mine has recently collapsed.  
- Since the coal seam is extremely thin in Meghalaya, no other method would be economically viable. Removal of rocks from the hilly terrain and putting up pillars inside the mine to prevent collapse would be costlier. In Meghalaya this is the locally developed technique and the most commonly used one.

Government policy?
The government does not have a policy in place to regulate mining and the new mining policy drafted in 2012 has not yet been implemented. Moreover, the NGT found the 2012 policy inadequate as it does not address rat-hole mining.

Impact of Meghalaya coal mining

- Meghalaya coal has **high sulphur content**, leading to **discharge of sulphuric acid** from these mines. The acid discharge in some areas is so severe that they have made the **rivers acidic**, affecting aquatic life and corroding machinery at hydroelectric projects and dams.
- The water also has high concentration of sulphates, iron and toxic heavy metals, low dissolved oxygen (DO) and high BOD, showing its degraded quality.
- The roadside dumping of coal is a major source of air, water and soil pollution.
- None of the rat-hole mines had leases; they simply didn’t exist on paper. All of them were **operating without any environment clearance** from the environment ministry or from the pollution control board. These illegalities were enabled by the so-called legal ambiguity regarding mining in Sixth Schedule areas as mentioned in the Constitution.
- As Meghalaya is a **Sixth Schedule state**, and the power to make laws with respect to land belongs to the **Autonomous District Councils**, **landowners can mine without any permission from the state or the Union governments**. To bolster the argument, it was alluded that the coal mines in Meghalaya were **never nationalised**.
- However, it was found that the coal mines of Khasi and Jaintia were **nationalised under the Coal Mines (Nationalisation) Act, 1973**.
- It is also found that paragraph 9 of the Sixth Schedule clearly stipulates the need for “Licences or leases for the purpose of prospecting for, or extraction of, minerals”.
- In addition, it is legally established that all central mining and environmental laws are applicable to the coal mines in Meghalaya.
- On a case filed by the All Dimasa Students’ Union that highlighted the unregulated coal mining in the **Jaintia Hills**, the National Green Tribunal (NGT) banned them in April 2014. But reports now indicate that in the guise of transporting already-mined coal, illegal mining was happening all along in collusion with the local and the state government.
- The political class supports these mines. The state government has challenged the ban in the Supreme Court and the state assembly in 2015.
adopted a resolution urging the Centre to exempt Meghalaya from central laws so that rat-hole mining can continue.

- But such mines are environmentally damaging and unsafe to be allowed, and hence must be banned. The bottom line is the right to self-governance does not translate into the right to destroy the environment, even in the Sixth Schedule areas.
- Off road movement of trucks and other vehicles in the area for coal transportation also adds to the ecological and environmental damage of the area.
- The practice has been declared as unsafe for workers by the NGT.
- The mines branch into networks of horizontal channels, which are at constant risk of caving in or flooding.

Source: TH

State Legislatures and COVID-19

State Legislatures and COVID-19

- The COVID-19 pandemic and the consequent lockdown, which affected the functioning of the legislatures of several States last year, had an apparently marginal impact on the working of the Karnataka legislature, if the number of sitting days is an indication.
- Compared with its average number of sitting days of 32 from 2016 to 2019, the Karnataka legislature, which is bicameral, met on 31 days last year, the highest for any State in 2020, according to a study that covered 19 States.
- The southern State was followed by Rajasthan (29 days) and Himachal Pradesh (25 days).
- For comparison, Parliament met for 33 days last year.
- In 2020, the average number of sitting days for the 19 States was 18, which was 11 less than the four-year (2016-19) average of 29.
- Kerala, which had the distinction of remaining at the top in the four years with an average of 53 days, had only 20 days of sittings of the legislature last year, stated the study report, “Annual Review of State Laws
As regards other southern States, Tamil Nadu had met on 23 days against its four-year average of 35, Andhra Pradesh had met on 12 days (four-year average of 26) and Telangana had met on 17 days (four-year average of 25 days).

After the lockdown, Karnataka’s figure of sitting days of the legislature was 10; Telengana 9; Andhra Pradesh 7; Tamil Nadu 3 and Kerala 2. However, the highest for any State, post-lockdown, was 11 in Chhattisgarh followed by 10 in Himachal Pradesh. Rajasthan, which was the number two State in terms of the overall number of sitting days, had met only on five days after the lockdown.

As for the number of Bills passed last year, Karnataka again topped the list with 61 Bills, followed by Tamil Nadu (42) and Uttar Pradesh (37). For this purpose, Appropriation Bills were excluded.

Among poor performers under this category, Delhi passed only one Bill; West Bengal passed two Bills, and Kerala three Bills.

On the duration of time taken to pass Bills, the previous year saw 59% of the Bills being passed by the legislature of the States on the day of introduction. A further 14% was adopted within a day of being introduced. Only 9% of the Bills was passed more than five days after introduction, some of which were referred to committees for further examination.

In respect of ordinances, data from the 19 States showed that, on average, 14 ordinances were promulgated last year.

Source: TH

Ordnance Factory Board corporatised

About Ordnance Factory Board

- Ordnance Factory Board (OFB) consisting of the Indian Ordnance Factories is a Government agency under the control of department of defence.
It is engaged in research, development, production, testing, marketing and logistics of a product range in the areas of air, land and sea systems.

OFB comprises 41 ordnance factories, 9 training institutes, 3 regional marketing centres and 4 regional controllerates of safety, which are spread all across the country.

Currently, the Kolkata headquartered OFB functions as a department under the Department of Defence Production.

Every year, 18 March is celebrated as the Ordnance Factory Day in India.

OFB is the world's largest government-operated production organisation, and the oldest organisation in India (Prelims).

It has a total workforce of about 80,000.

It is often called the "Fourth Arm of Defence", and the "Force Behind the Armed Forces" of India.

OFB is the 35th largest defence equipment manufacturer in the world, 2nd largest in Asia, and the largest in India.

### Historical Perspective

The first Indian ordnance factory can trace its origins back to the year 1712 when the Dutch Ostend Company established a Gun Powder Factory in Ichhapur.

This is the oldest ordnance factory in India still in existence.

The Indian Ordnance Factories have not only supported India through the wars, but played an important role in building India with the advancement of technology and have ushered the Industrial Revolution in India starting with the

1. **first modern steel plant of India much before Tata Steel,**
2. **first modern electric textile mill of India,**
3. **first chemical industries such as smokeless propellant plants of India,**
4. **established the first engineering colleges of India as its training schools,**
5. **played key role in the founding of research and industrial organisations like ISRO, DRDO, BDL, BEL, BEML and SAIL.**

### Corporatisation of OFB

- Cabinet approved a plan to corporatise the Ordnance Factory Board (OFB),
which has 41 factories, into 7 fully government owned corporate entities on the lines of Defence Public Sector Undertakings (DPSU).

- Once implemented, the OFB, the establishment of which was accepted by the British in 1775, will cease to exist.

**Impact of this decision**

- It is a major decision in terms of national security and also make the country self-sufficient in defence manufacturing.
- This move would allow these companies autonomy as well as help improve accountability and efficiency.
- This restructuring is aimed at transforming the ordnance factories into productive and profitable assets, deepening specialisation in the product range, enhancing competitiveness, improving quality and achieving cost efficiency.
- All employees of the OFB (Group A, B and C) belonging to the production units would be transferred to the corporate entities on deemed deputation initially for a period of two years without altering their service conditions as Central government employees.
- The pension liabilities of the retirees and existing employees would continue to be borne by the government.

Source: TH
Rules regulating Cable TV network amended

- The Central Government today issued a notification amending the Cable Television Network Rules, 1994 thereby providing a **statutory mechanism for redressal of grievances/complaints of citizens** relating to content broadcast by television channels in accordance with the provisions of the **Cable Television Network Act, 1995**.
- At present, there is an institutional mechanism by way of an Inter-Ministerial Committee to address grievances of citizens relating to violation of the Programme/Advertising Codes under the Rules.
- At present there are over 900 television channels which have been granted permission by the Ministry of Information and Broadcasting all of which are required to comply with the Programme and Advertising Code laid down under the Cable Television Network Rules.
- The Cable Television Networks (Amendment) Rules, 2021, provides for a 3-level grievance redressal mechanism —
  1. Self-regulation by broadcasters,
  2. Self-regulation by the self-regulating bodies of the broadcasters, and
  3. Oversight by an Inter-Departmental Committee at the level of the Centre.
- A viewer could file a complaint directly to the broadcaster, who would have to respond within 15 days.
- If the complainant was not satisfied with the response, the complaint could be escalated to the self-regulating bodies set up by TV channels, which should deal with the case in 60 days.
- If the complainant is not satisfied with the decision of the self-regulating body, he may, within 15 days of such decision, prefer an appeal to the Central government for its consideration under the Oversight Mechanism.
- Such appeals would be dealt with by the Inter-Departmental Committee set up under the Oversight Mechanism.
- The Committee would be headed by the Additional Secretary in the Ministry of Information and Broadcasting, and have members from the Ministry of Women and Child Development, Home Ministry, Ministry of Electronics and Information Technology, Ministry of External Affairs, Ministry of Defence, and representatives of other Ministries and organisations, including experts, as the Centre may decide.
- This third tier was not only kept aside to hear the appeals, it could take up
complaints that come directly to the Centre.

Source: PIB
The country’s first Regional Rapid Transit System (RRTS) is set to use an advanced signalling and train control system. According to the NCRTC, the RRTS will adopt a modern European Train Control System Level 2 signalling over the long-term evolution communication backbone with the adoption of state-of-art Hybrid Level 3. Adoption of this signalling technology adds to the distinction of RRTS, as the first technologically advanced rail network in India will be operational with a design speed of 180 km/hr. The ETCS signalling system will be a key enabler in ensuring interoperability and train movement at quick frequencies, thereby reducing waiting time for passengers.

Regional Rapid Transport System (RRTS)

The Planning Commission formed a Task Force in 2005 under the Chairmanship of Secretary, Ministry of Urban Development (MoUD) to develop a multi modal transit system for Delhi National Capital Region (NCR). This was included in the Integrated Transport Plan for NCR.
2032 with special emphasis on Regional Rapid Transit System (RRTS) connecting regional centres.

- The Task Force identified **8 corridors and prioritised three corridors namely Delhi-Meerut, Delhi-Panipat and Delhi-Alwar** for implementation.

**Difference between RRTS and Train**

<table>
<thead>
<tr>
<th></th>
<th>RRTS</th>
<th>Metro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Speed 180 Km/hr</td>
<td>Speed 90 Km/hr</td>
</tr>
<tr>
<td>Ops</td>
<td>Speed 160 Km/hr</td>
<td>Speed 80 Km/hr</td>
</tr>
<tr>
<td>Average</td>
<td>Speed 100 Km/hr</td>
<td>Average 32 Km/hr</td>
</tr>
<tr>
<td>Time</td>
<td>Speed 150 Km/hr for Non Stop</td>
<td>Time to Travel 100 Km – 3 hours</td>
</tr>
</tbody>
</table>
UPSC "PT" DNA (Daily News Analysis)

Corridors being developed under RRTS
Phase 1

- Delhi – Ghaziabad – Meerut Corridor
- Delhi – Gurugram – SNB – Alwar Corridor
- Delhi – Panipat Corridor

Other corridors

- Delhi – Faridabad – Ballabgarh - Palwal
- Ghaziabad – Khurja
- Delhi - Bahadurgarh - Rohtak
- Ghaziabad-Hapur
- Delhi-Shahdra-Baraut
Indian Railways and Technology for India

Technology in the year 2020 is going to be a growth driver for Indian Railways. In the coming years, Indian Railways aims to provide world-class train journey experience to passengers by embracing technological advancements. With a focus on safety, comfort, and convenience, Indian Railways is aiming to transform its network.

With the launching of engine-less, self-propelled- Vande Bharat Express trains to implementation of passenger eco-friendly facilities, there is a sense of improved and enhanced train journey experience.

Vande Bharat Express
It is India’s first indigenously built engineless semi-high speed train. Earlier, it was known by the name Train 18.

It runs between Delhi and Varanasi at a maximum speed of 160 kmph.

It has been built by the Integral Coach Factory, Chennai, in a record time of 20 months.

The train is a 100% ‘Make in India’ project and is claimed to be
It is energy-efficient as its coaches will be fitted with LED lights. Coaches will have automatic doors and retractable footsteps. It will be inter-connected with fully sealed gangways along with a GPS-based Passenger Information System. It is provided with Bio toilets.

Enhancing passenger experience

- According to Indian Railways, technology in the year 2020 is going to be a growth driver. As there is no shortage of coaches now, the focus will be on introducing SMART coaches on the Indian Railways network.
- Also, with modern features like CCTVs with facial recognition, emergency talk-back system, WiFi infotainment system, automatic plug-door and step control, etc. there will be a complete change in travel experience.

Introducing world-class train sets

- For Indian Railways, the introduction of ‘Make in India’ semi-high speed Vande Bharat Express trains was the biggest success story of last year.
- This year as well as in the coming years, the national transporter plans to launch many other world-class train sets, improving the railway connectivity across the country.
- According to Rajesh Agrawal, the aim is to also start exporting trains.

Manufacturing of coaches

- The Chittaranjan Locomotive Works in Chittaranjan and Banaras Locomotive Works in Varanasi makes electric locomotives.
- The Integral Coach Factory in Perambur, Chennai makes integral coaches. These have a monocoque construction, and the floor is an integral unit with the undercarriage.
- The Rail Coach Factory in Kapurthala also makes coaches.
- The Titagarh Wagons builds freight wagons.
- The Rail Wheel Factory at Yelahanka, Bangalore and Rail Wheel Plant, Bela, Chhapra, Bihar manufacture wheels and axles.
- Diesel-Loco Modernisation Works, Patiala upgrades the diesel locomotives.
- Some electric locomotives have been supplied by BHEL, Jhansi and Palakkad, and locomotive components are manufactured in several other plants around the country.
There has been an exponential growth in coach production. For the first time in 2018-19, Indian Railways has witnessed more supply than demand. The financial year 2018-19 saw the highest production of coaches in the last two decades, with a total of 5,836 coaches. The Modern Coach Factory (MCF), Rae Bareilly had doubled its production, last year.

Environmental impact

- Indian Railways plans to focus on cleanliness of trains and stations.
- Beginning with the installation of 57 bio-toilets in 31 coaches in January 2011, Indian Railways has now successfully installed over 2.2 lakh bio-toilets covering about 61,500 passenger carrying coaches.
- Moreover, 950 railway stations have been provided with integrated mechanised cleaning till now.
- Also, 13 railway stations have achieved Green Certification and 85 railway stations have been certified for implementation of Environment Management System.

Freight logistics

- The freight logistics of the national transporter is picking up, according to the Railway Board. The freight carrying capacity has been increased from 7 Million MT to 1 Billion MT.
- Meanwhile, Indian Railways has come up with a wagon design for new traffic streams, which includes bulk, cement and fly ash transportation, steel coil 1, steel coil 2, road railers, parcel wagon.
- A private parcel wagon design is also currently under consideration at RDSO.
- Additionally, a Smart Yard is likely to be introduced for maintenance of rolling stock.

Recent news in Railway sector
In 2017, NITI Aayog cleared half-a-dozen proposals of the transport ministry exploring options to improve public transport. The think tank approved the proposals of the transport ministry with a condition that the ministry conducts trial run of all these technologies and puts in place safety measures before starting commercially operation.
These technologies include metrino, stadler buses, hyperloop, pod taxis, hybrid buses and freight rail road.

The new technologies are being explored as current public transportation is unable to resolve the increasing traffic crisis in the country. Besides, some of them are more cost effective than the existing ones.

**Hyperloop**

In a Hyperloop, the passenger pods or capsules travel through a tube, either above or below ground. To reduce friction, most but not all of the air is removed from the tubes by pumps.

Overcoming air resistance is one of the biggest uses of energy in high speed travel.

Airliners climb to high altitudes to travel through less dense air; in order to create a similar effect at ground level, Hyperloop encloses the capsules in a reduced-pressure tube, effectively allowing the trains to travel at airplane speeds but on the ground.

---

**Train Speeds Comparison**

<table>
<thead>
<tr>
<th>Train</th>
<th>Top Speed</th>
<th>London to Edinburgh</th>
<th>Birmingham to Manchester</th>
<th>London to Birmingham</th>
<th>London to Manchester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperloop One</td>
<td>670mph</td>
<td>50min</td>
<td>12min</td>
<td>14min</td>
<td>22min</td>
</tr>
<tr>
<td>HS2</td>
<td>250mph</td>
<td>3hr 30min</td>
<td>40min</td>
<td>49min</td>
<td>1hr 8min</td>
</tr>
<tr>
<td>Virgin trains</td>
<td>125mph</td>
<td>4hr 30min</td>
<td>1hr 31min</td>
<td>1hr 22min</td>
<td>2hr 8min</td>
</tr>
</tbody>
</table>

**How Speeds Compare**

- Eurostar: 186mph
- Bullet train: 275mph
- Boeing 737: 485mph
- Hyperloop One: 670mph
- Concorde: 1,354mph

---

**The hyperloop train is the brainchild of billionaire Elon Musk, former boss of PayPal and founder of electric car company Tesla.**

**Scale of Hyperloop vs London Tube**

**High-powered electromagnets on the side of the tube lift train above track and guide it.**

**Pods carry passengers or cargo at 670mph.**
In model, the pressure of air inside the Hyperloop tube is about one-sixth the pressure of the atmosphere on Mars. This means an operating pressure of 100 pascals, which reduces the drag force of the air by 1,000 times relative to sea level conditions, and would be equivalent to flying above 150,000 feet altitude.

The pod would get its initial velocity from an external linear electric motor, which would accelerate it to 'high subsonic velocity' and then give it a boost every 70 miles or so; in between, the pod would coast along in near vacuum.

**Modern Train Control system**

- Indian Railways has decided to modernize its Signalling system on its entire network by implementing Modern Train Control system.
- The RailTel Enterprises Ltd. (REL), a 100% subsidiary of RailTel Corporation of India Ltd. has been given the responsibility to implement these four pilot projects on behalf of Indian Railway.
- The MTCS includes provision of:
  1. Automatic Train Protection (ATP) System
  2. Electronic Interlocking System
  3. Remote Diagnostic & Predictive Maintenance System
  4. Long Term Evolution (LTE) based Mobile Train Radio Communication (MTRC) System
  5. Centralized Traffic Control System (CTC) /Train Management System (TMS)

**Maglev trains in India**
State-run engineering BHEL announced its tie up with SwissRapide AG to bring Maglev trains (magnetic levitation) to India. Aimed at expanding its footprint in the urban transportation sector as part of

- State-run engineering BHEL announced its tie up with SwissRapide AG to bring Maglev trains (magnetic levitation) to India.
- Aimed at expanding its footprint in the urban transportation sector as part of
its diversification initiatives, BHEL has entered into a Memorandum of Understanding (MoU) with SwissRapide AG for Maglev Train projects in India.

- The Maglev Rail system hovers in the air instead of rolling, due to magnetic levitation, thus the vehicles have no physical contact with the guideway. This enables the system to be highly energy efficient, allows operating speeds of easily up to 500 km/h and significantly reduces the total cost of system ownership.
- The agreement has been signed in the backdrop of the Prime Minister's 'Make in India' and 'Aatmanirbhar Bharat' initiatives, and will enable BHEL to bring the latest, world-class technology to India and manufacture state-of-the-art Maglev trains indigenously.
- The SwissRapide AG is a Swiss company specialised in the promotion, project management, planning, specification, design, implementation and commissioning of international Maglev Rail projects and related technologies.
- It holds the unique position of offering Transrapid Maglev technology, the only established and commercially proven ultra-high-speed Maglev Rail system in the world.
- BHEL has been pioneering new technologies and has been a reliable partner in the growth of Indian Railways for over ve decades by supplying electric as well as diesel locomotives, EMUs (electrical multiple unit), and propulsion system sets and drives for the same.
- Kolkata Metro, the first Metro in India, is equipped with BHEL made propulsion systems. The first ever air-conditioned AC-EMUs, presently operational in Mumbai suburban, are also equipped with BHEL-made propulsion and related electrics.

India's first pod taxi project moves a step forward
The Union Government has approved country's first Metrino Pod project i.e. personal rapid transit (PRT) network for Gurgaon, Haryana. It is a projected pod taxi scheme.

**What is a Personal Rapid Transit (PRT) Network?**
A PRT network is made up of small automated vehicles (dubbed
as pod) running at close intervals on a guideway with docking stations for passengers to get on and get off.

- The pod can accommodate up to **five** people. The average speed of the pods is 60kmph.
- Passengers have an option to hire an entire pod that will take a passenger straight to the destination, skipping the scheduled stops.

- PRT is an advanced public transport using automated electric pod cars to provide a taxi-like demand responsive feeder and shuttle services for small groups of travelers and is a green mode of uninterrupted journey
- NHAI has been mandated to execute it on **Delhi-Gurgaon pilot corridor** from Delhi-Haryana border to Rajiv Chowk in Gurgaon on a PPP (public-private partnership) basis.
- The model is in place at London’s Heathrow airport, Morgantown and Masdar city.
- It will be incorporating Automated People Movers (APM) standards and specifications, along with other general safety parameters with Niti Aayog recommendations.

**Automated people mover (APM) standards in the US**

- These are recommended by the committee for the maiden PRT in India and have been prepared by the American Society of Civil Engineers (ASCE)
- These constitute the minimum requirements for an acceptable level of safety and performance for the PRT
- These include vehicle arrival audio and video visual warning system, platform sloping, evacuation of misaligned vehicles, surveillance/CCTV, audio communication, emergency call points and fire protection, among other advanced systems.

**Mumbai–Ahmedabad high-speed rail (MAHSR) corridor**
The Mumbai–Ahmedabad high-speed rail corridor is an under-construction high-speed rail line connecting the cities of Ahmedabad, Gujarat, and India’s economic hub Mumbai, Maharashtra. It will be India's first high-speed rail line. The bullet train is symbol of strong trust between the India and Japan as it involves the technology transfer at the core of this deal. By L&T constructions.

Length 508 kms double line. Mumbai Ahmedabad High Speed Rail will be passing through two states, Maharashtra 155.642 KMs and Gujarat 350.530 KMs and one Union Territory of Dadra and Nagar Haveli 2 KMs. 12 stations: Mumbai, Thane, Virar, Boisar, Vapi, Bilimora, Surat, Bharuch, Vadodara, Anand, Ahmedabad, Sabarmati. Except Mumbai, all other stations will be elevated. Maximum Design Speed - 350 kmph while Maximum Operating speed of 320 kmph. Journey time: 2.07 hrs (limited stops), 2.58 hrs (stopping at all stations). Maintenance of Trains: Sabarmati (Depot & Workshop) and Thane Depot. A 21-km-long tunnel will be built between Boisar and BKC in Mumbai, of which 7km will be under water.
The Railways will only require around 825 hectares of land for the project as 92 per cent of the route will be elevated, six per cent will go through tunnels and only the remaining two per cent will be on ground.

Source: TH

Illegal sale of HT Bt Cotton doubled

What is Genetic Engineering?

- Through genetic engineering, scientists are able to move desirable genes from one plant or animal to another or from a plant to an animal or vice versa.
- In essence, genetic engineering is a technology wherein a specific gene can be selected and implanted into the recipient organism.
- The process of genetic engineering involves splicing an area of a chromosome, a gene, that controls a certain characteristic of the body. For example:
  - A gene may be reprogrammed to produce an antiviral protein.
  - A gene can be removed and can be placed into a bacterial cell where it can be sealed into the DNA chain using ligase.

Genetically Modified Seeds:

- Conventional plant breeding involves crossing species of the same genus to provide the offspring with the desired traits of both parents.
- Genus is a class of items such as a group of animals or plants with similar traits, qualities or features.
- Genetic modification aims to transcend the genus barrier by introducing an alien gene in the seeds to get the desired effects. The alien gene could be from a plant, an animal or even a soil bacterium.
- Bt cotton is the only Genetically Modified (GM) crop that is allowed in India. It has alien genes from the soil bacterium Bacillus thuringiensis (Bt) that allows the crop to develop a protein toxic to the common pest pink bollworm.
- Herbicide Tolerant Bt (Ht Bt) cotton, on the other hand is derived with the...
insertion of an additional gene, from another soil bacterium, which allows the plant to resist the common herbicide glyphosate.

- In Bt brinjal, a gene allows the plant to resist attacks of fruit and shoot borers.
- In DMH-11 mustard, genetic modification allows cross-pollination in a crop that self-pollinates in nature.

Legal Position of GM crops in India

- In India, the Genetic Engineering Appraisal Committee (GEAC) is the apex body that allows for commercial release of GM crops.
- In 2002, the GEAC had allowed the commercial release of Bt cotton. More than 95% of the country's cotton area has since then come under Bt cotton.
- Use of the unapproved GM variant can attract a jail term of 5 years and fine of Rs. 1 lakh under the Environment Protection Act, 1986.

Genetic Engineering Appraisal Committee

- The Genetic Engineering Appraisal Committee (GEAC) functions under the Ministry of Environment, Forest and Climate Change (MoEF&CC).
- It is responsible for the appraisal of activities involving large-scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
- The committee is also responsible for the appraisal of proposals relating to the release of genetically engineered (GE) organisms and products into the environment including experimental field trials.
- GEAC is chaired by the Special Secretary/Additional Secretary of MoEF&CC and co-chaired by a representative from the Department of Biotechnology (DBT).

Advantages of Genetic Engineering

- Genetically Modified (GM) Crops: Genetic engineering made it possible to create crop varieties regarded as “more beneficial” terms of coming up with crops with the desired traits.
- Examples- Bt Cotton
- Treatment of Genetic Disorders and Other Diseases: Through genetic engineering, genetic disorders may also be fixed by replacing the faulty gene
with a functional gene.
• Disease-carrying insects, such as mosquitoes, may be engineered into becoming sterile insects.
• This will help in curbing the spread of certain diseases, e.g. malaria and dengue fever.
• Therapeutic Cloning: It is a process whereby embryonic cells are cloned to obtain biological organs for transplantation.

Challenges of Genetic Engineering:
• Irreversible Changes: Some scientists believe that introducing genetically-modified genes may have an irreversible effect with consequences yet unknown.
• GMO that can cause harmful genetic effects, and genes moving from one species to another that is not genetically engineered.
• It has been shown that GMO crop plants can pass the beneficial gene along to a wild population which may affect the biodiversity in the region. An example is the sunflowers genetically-engineered to fend off certain insects.
• Health Issues Related with GMO Crops: There are concerns over the inadvertent effects, such as the creation of food that can cause an allergic reaction.
• Bioethics: Genetic engineering borderlines on many moral and ethical issues. One of the major questions raised is if humans have the right to manipulate the laws and course of nature.

Dangers Associated With Genetic Engineering:
• Rapid Growth of Technology: Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) gene editing, developed only a few years ago, deploys the same natural mechanism that bacteria use to trim pieces of genetic information from one genome and insert it into another.
• This mechanism, which bacteria developed over millennia to defend themselves from viruses, has been turned into a cheap, simple, quick way to edit the DNA of any organism in the lab.
• CRISPR isn’t the only genetic technology we need to worry about. A broader field, “synthetic biology”, is making the tools for genetic engineering widely available.
• Democratisation of Biotechnology: As CRISPR is cheap and easy to use, thousands of scientists all over the world are experimenting with CRISPR-based gene editing projects with very little of this research being limited by regulations.
The technologies have democratised to such a degree that any country can engineer viruses. Further, the danger comes not only from governments: Non-state actors, rogue scientists and bio-hackers have access to the same tools. Also, researchers have demonstrated that they can recreate deadly viruses such as that of smallpox, which took humanity decades to eradicate.

**Solutions:**

- Leveraging Artificial Intelligence & Big Data. With Artificial Intelligence (AI) and genomic data, scientists will decipher the complex relationships between DNA and biological processes and find treatments for diseases.
- 3-D printing can help develop at home medicines, tissues, and bacteria custom-designed to suit our DNA and keep us healthy.
- Gathering of Genomic Data: There is a need to develop genomic blueprints of human and other species, this information can help immensely to defend and develop vaccines against pandemics like Covid-19.

**Illegal Cultivation of HT Bt Cotton**

- The illegal cultivation of herbicide-tolerant (HT) Bt cotton has seen a huge jump this year, with seed manufacturers claiming that the sale of illegal seed packets has more than doubled from 30 lakh last year to 75 lakh this year.
- Industry lobbies have written to the Agriculture Ministry, demanding that action be taken to stop such sales and punish offenders, noting that cultivation of the genetically modified cotton variant has serious environmental and economic consequences.
- However, a senior official at the Ministry said it was up to the State governments to enforce the policy.
- This comes even as activists from the Shetkari Sangathan have stepped up the reach of their civil disobedience movement to demand the legalisation of HTBt cotton by encouraging farmers to plant the seeds in violation of government regulations.

**About Bt Cotton**

- Bt cotton is the only transgenic crop that has been approved by the Centre for commercial cultivation in India.
- It has been genetically modified to produce an insecticide to
combat the cotton bollworm, a common pest.
- The HTBt cotton variant adds another layer of modification, making the plant resistant to the herbicide glyphosate, but has not been approved by regulators.
- Fears include glyphosate having a carcinogenic effect, as well as the unchecked spread of herbicide resistance to nearby plants through pollination, creating a variety of superweeds.

- This year there is a big increase in such illegal cultivation especially in Maharashtra from 30 lakh packets last year to about 75 lakh packets this year.
- “To make matters worse, the illegal seeds are sold using the brand name of prominent companies ... Farmers are at risk with such illegal cotton seed sale as there is no accountability of the quality of seed; it pollutes the environment, the industry is losing legitimate seed sale and the government also loses revenue in terms of tax collection,” the letter added, noting that **HTBt seeds are often produced in Gujarat and then moved to Maharashtra.**
- “It will not only decimate small cotton seed companies but also threatens the entire legal cotton seed market in India,” National Seed Association of India president Prabhakar Rao said on Friday.
- “Regulators are only limiting their checking to licensed dealers and seed companies while this illegal activity of HT seed sales is carried mostly by unorganised and fly by night operators. The focus must be shifted to catching them and taking exemplary and strong punitive action.”
- Deputy Seeds Commissioner Dilip Srivastava admitted that such complaints had become widespread. “Centre has made the policy to ban this variant. But it is the State governments that must take action. We are issuing advisories from time to time,” he told The Hindu.
- Another official said following Central advisories to all cotton-growing States, Maharashtra, Gujarat and Telangana have seized HTBt stock and taken punitive action against the culprits.

Source: TH
Nuclear Programme of India

This topic is important for Paper III of UPSC Mains 2021 and UPSC Prelims 2021 also since many questions come directly through AspireIAS notes on Nuclear Programme of India.

In 2018, India commemorated 20 years since it conducted its five nuclear tests, known as Operation Shakti–98, and 10 year since India – U.S Civil Nuclear Agreement in 2008, also called as 123 Agreement. India on November 5, 2018, declared that its nuclear triad, stated in its nuclear doctrine, is operational after indigenous ballistic missile nuclear submarine INS Arihant achieved a milestone by conducting its first deterrence patrol.

Nuclear power in India delivers a total capacity of 6.7 GWe (Giga Watt Electricity), contributing about 2% of the country’s electricity supply. India has ambitious plans to increase nuclear power generation capacity to 275 GWe by 2052. At the start of 2018, six reactors were under construction in India, with a combined capacity of 4.4 GWe.
India has a largely indigenous nuclear power programme which is controlled by Nuclear Power Corporation of India Ltd. (NPCIL), a state-owned corporation founded in 1987. Because India is outside the Nuclear Non-Proliferation

Treaty due to its weapons programme, it was, for 34 years, largely excluded from trade in nuclear plant and materials, which hampered its development of civil nuclear energy until 2009.

Due to earlier trade bans and lack of indigenous uranium, India has uniquely been developing a nuclear fuel cycle to exploit its reserves of thorium.

India’s Nuclear Energy Program

- India has consciously proceeded to explore the possibility of tapping nuclear energy for the purpose of power generation. In this direction three-stage nuclear power programme was formulated by Homi Bhabha in the 1950s.
- Atomic Energy Act, 1962 was framed and implemented with the set objectives of using two naturally occurring elements Uranium and Thorium having good potential to be utilized as nuclear fuel in Indian Nuclear Power Reactors.
- The estimated natural deposits of Uranium are about 70,000 tonnes and Thorium are about 3,60,000 tonnes in the country.

Three Stage programme

- **Stage one – Pressurised Heavy Water Reactor** uses
  - Natural UO2 as fuel matrix,
  - Heavy water as moderator and coolant.
- In the reactor, the first two plants were of boiling water reactors based on imported technology. Subsequent plants are of PHWR type through indigenous R&D efforts. India achieved complete self-reliance in this technology and this stage of the programme is in the industrial domain.
- The future plan includes the setting up of VVER type i.e. Russian version of the Pressurized Water Reactor (PWR) is under progress to augment power generation.
- **MOX fuel (Mixed oxide)** is developed and introduced at Tarapur to conserve fuel and to develop new fuel technology.
- **Second stage** of nuclear power generation envisages the use of Pu-239 obtained from the first stage reactor operation, as the fuel core in fast breeder reactors (FBR).
- **Third phase** of India’s Nuclear Power Generation programme is, breeder reactors using U-233 fuel.
- India’s vast thorium deposits permit design and operation of U-233 fuelled breeder reactors.
<table>
<thead>
<tr>
<th>in Operation Power Plants</th>
<th>under Construction Power Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rawatbhata (Rajasthan)</td>
<td>Kakrapar 3&amp;4 (Gujarat)</td>
</tr>
<tr>
<td>Tarapur (Maharashtra)</td>
<td>Rawatbhata (Rajasthan)</td>
</tr>
<tr>
<td>Kudankulam (Tamil Nadu)</td>
<td>Kudankulam 3&amp;4 (Tamil Nadu)</td>
</tr>
<tr>
<td>Kakrapar (Gujarat)</td>
<td>Kalpakam PFBR (Tamil Nadu)</td>
</tr>
<tr>
<td>Kalpakkam (Tamil Nadu)</td>
<td></td>
</tr>
<tr>
<td>Narora (Uttar Pradesh)</td>
<td></td>
</tr>
<tr>
<td>Kaiga (Karnataka)</td>
<td></td>
</tr>
<tr>
<td>Jaitapur (Maharashtra)</td>
<td></td>
</tr>
<tr>
<td>Kovvada (Andhra Pradesh)</td>
<td></td>
</tr>
<tr>
<td>Mithi Virdi (Gujarat)</td>
<td></td>
</tr>
<tr>
<td>Haripur (West Bengal)</td>
<td></td>
</tr>
<tr>
<td>Gorakhpur (Haryana)</td>
<td></td>
</tr>
<tr>
<td>Bhimpur (Madhya Pradesh)</td>
<td></td>
</tr>
<tr>
<td>Mahi Banswara (Rajasthan)</td>
<td></td>
</tr>
<tr>
<td>Kaiga (Karnataka)</td>
<td></td>
</tr>
<tr>
<td>Chutka (Madhya Pradesh)</td>
<td></td>
</tr>
<tr>
<td>Tarapur (Maharashtra)</td>
<td></td>
</tr>
</tbody>
</table>
Challenges

- Genuine problems of Nuclear technology includes safety and waste
management. Incidents like Chernobyl, Three Mile Island, Fukushima are serious case of concern.

- Complete phase out of nuclear power generation for the fear of nuclear accident would be a wrong move. If nuclear energy is generated adhering to the highest standards of safety, there is less possibility of catastrophic accidents.
- Land acquisition and selection of location for Nuclear Power Plant (NPP) is also major problem in the country. NPP’s like kudankulam in Tamil Nadu and Kovvada in Andhra Pradesh have met with several delays due to the land acquisition related challenges.
- As India is not a signatory of NPT and NSG, nuclear supply is severely contained by sanctioned against India. This situation has changed after 2009 waiver and bilateral civil nuclear energy agreements with many countries.
- Reprocessing and enrichment capacity also required boost in India. For this India needs advanced technology to fully utilise the spent fuel and for enhancing its enrichment capacity.
- On the front of Infrastructure and Manpower needs, India has worked very hard for development of Industrial infrastructure to manufacture equipment and skill development. Many Universities and institutes provide engineering manpower for NPP.

Suggestions

To ensure the safety and security of using nuclear power there is need to:

- ensure maintenance of the skills base
- maintain continued effective safety regulation
- foster progress on facilities for waste disposal and management must be given serious consideration.
- maintain and reinforce international non-proliferation arrangements.

Challenges

- Genuine problems of Nuclear technology includes safety and waste management. Incidents like Chernobyl, Three Mile Island, Fukushima are serious case of concern.
- Complete phase out of nuclear power generation for the fear of nuclear accident would be a wrong move. If nuclear energy is generated adhering to the highest standards of safety, there is less possibility of catastrophic accidents.
- Land acquisition and selection of location for Nuclear Power Plant (NPP) is
also a major problem in the country. NPP’s like Kudankulam in Tamil Nadu and Kovvada in Andhra Pradesh have met with several delays due to the land acquisition related challenges.

- As India is not a signatory of NPT and NSG, nuclear supply is severely contained by sanction against India. This situation has changed after 2009 waiver and bilateral civil nuclear energy agreements with many countries.
- Reprocessing and enrichment capacity also required boost in India. For this India needs advanced technology to fully utilise the spent fuel and for enhancing its enrichment capacity.
- On the front of Infrastructure and Manpower needs, India has worked very hard for development of Industrial infrastructure to manufacture equipment and skill development. Many Universities and institutes provide engineering manpower for NPP.

Suggestions

To ensure the safety and security of using nuclear power there is need to:

- ensure maintenance of the skills base
- maintain continued effective safety regulation
- foster progress on facilities for waste disposal and management must be given serious consideration.
- maintain and reinforce international non-proliferation arrangements.

Nuclear Tests and Nuclear Doctrine

- In 2003, India has adopted its Nuclear Doctrine of 'No First Use' i.e. India will use nuclear weapons only in retaliation against a nuclear attack on its Territory.
- In addition with this in 1965, India with NAM countries proposed five points to prevent the proliferation of nuclear weapons to UN Disarmament commission. These are:
  - Not to transfer Nuclear technology to others
  - No use of nuclear weapons against non nuclear countries
  - UN security cover to non nuclear States
  - Nuclear disarmament
  - Ban on the nuclear test
- In May 1974, India has conducted its first nuclear test in Pokharan with the codename of "Smiling Buddha".
- Between 11 and 13 May, 1998, five nuclear tests were conducted as a part of the series of Pokhran-II. These tests were collectively
called **Operation Shakti–98**.

- According to a 2018 report by the Stockholm International Peace Research Institute (SIPRI), Pakistan has 140-150 nuclear warheads compared to India's 130-140 warheads.
- Pakistan has not stated a “no first use” policy and there is little known about its nuclear doctrine.

**India’s Stand on different Nuclear Treaties**

- **Limited Ban Treaty**: US, UK and USSR in 1963, signed this treaty. It allows nuclear tests only underground thus, prohibits the nuclear experiments on ground, underwater and in outer space. India has also ratified the treaty.
- **Treaty on Outer Space**: Signed in 1967, it prohibits countries to test nuclear weapons in orbit or on celestial bodies like moon.
- **Nuclear Non-Proliferation Treaty (NPT)**: Signed in 1968, the treaty entered into force in 1970, now has 190 member states. It requires countries to give up any present or future plans to build nuclear weapons in return for access to peaceful uses of nuclear energy.
- **Three main objectives of the treaty are non-proliferation, disarmament, and the right to peacefully use nuclear technology**.
- **India is one of the only five countries that either did not sign the NPT** or signed but withdrew, thus becoming part of a list that includes Pakistan, Israel, North Korea, and South Sudan.

**Why India didn’t sign the NPT?**

- The quest for freedom of action in an uncertain regional strategic environment and an asymmetric international system dominated by superpowers and China drove India to not sign the NPT and hedge, and to conduct the 1974 test.
- India perceives its nuclear weapons and missile programs as crucial components of its strategic doctrine.
- India rejects the Treaty on the grounds that it perpetuates—at least in the short-term—an unjust distinction between the five states that are permitted by the treaty to possess nuclear weapons, while requiring all other state parties to the treaty to remain non-nuclear weapon states.
- One major point raised by India is that the five authorized nuclear weapons states still have stockpiles of warheads and have shown reluctance to disarmament which also angered some non-nuclear-weapon NPT states.
- For eliminating the last nuclear weapons, the nuclear weapons state requires confidence that the other countries would not acquire nuclear...
Moreover, India’s pledge of not to use nuclear weapons unless first attacked by an adversary and a self-imposed moratorium on nuclear test since 1998, established its credibility as a peaceful nuclear power even without joining the treaty.

Perceived security threats from Pakistan and Pakistan’s ally China and demonstration of a nuclear weapons capability guaranteed New Delhi’s ability to effectively hedge in an asymmetric international system, and a regional strategic environment where New Delhi felt largely cornered.

Maintaining a degree of political autonomy has driven independent India’s foreign policy choices. Major decisions that New Delhi took in the nuclear realm are representative of that. The grand bargain of NPT was certainly going to restrict India’s policy options.

Domestic political imperatives also dictated the timing and the rhetoric about the nuclear power.

**Comprehensive Test Ban Treaty (CTBT)** intends to ban all nuclear explosions - everywhere, by everyone. It opened for signature on 24 September 1996 and since then 182 countries have signed the Treaty, most recently Ghana has ratified the treaty on 14 June 2011.

The Treaty will enter into force after all 44 States listed in Annex 2 to the Treaty will ratify it. These States had nuclear facilities at the time the Treaty was negotiated and adopted.

As of August 2011, 35 of these States have ratified the Treaty. Nine States still need to do so: China, the Democratic People’s Republic of Korea, Egypt, India, Indonesia, Iran, Israel, Pakistan and the United States. India, North Korea and Pakistan have not yet signed the Treaty.

**Reasons behind India’s rejection to CTBT**

India has always stood by its demand for a nuclear weapons-free world but various procedural, political, and security concerns have stopped India to join the treaty.

India’s relationship with the CTBT has undergone distinct changes. In 1954, Indian Prime Minister Jawaharlal Nehru championed the cause of a nuclear test ban by calling for a “standstill” agreement. In 1993, India was among those that co-sponsored the call for a test ban treaty. However, in 1996, India’s reservations about the Treaty blocked its adoption by the Conference on Disarmament.

India, after negotiation was ready to sign the treaty provided United States weapons.
India believed that the universal and complete nuclear disarmament should be the end goal not a mean.

India considered, Article XIV, the entry-into-force (EIF) clause of the treaty as a violation of its right to voluntarily withhold participation in an international treaty.

The treaty initially made ratification by states, that were to be a part of the CTBT’s International Monitoring System (IMS), mandatory for the treaty’s EIF. Because of this, India withdrew its participation from the IMS.

The treaty didn’t talk about the disarmament of the stocks by nuclear weapon states.

Further, the treaty is vague on the ban of laboratory testing of nuclear weapons. It means sophisticated technology of developed countries permit them for laboratory testing and ban on field test only affect the developing countries nuclear programme.

India’s scientific community believes that accepting the CTBT would hinder India’s strategic nuclear program development and the option to test must be kept open.

On the security front, India thought that it faced uncertain dangers from Pakistan, and China, which had conducted nuclear tests even while the CTBT was being negotiated.

Fissile Material Cut-off Treaty (FMCT) is a proposed international agreement that would prohibit the production of two main components of nuclear weapons: highly-enriched Uranium and Plutonium.

An FMCT would provide new restrictions for the five recognized nuclear weapon states (NWS—United States, Russia, United Kingdom, France, and China), and for the four nations that are not NPT members (Israel, India, Pakistan, and North Korea).

Missile Technology Control Regime (MTCR) is not a treaty and does not impose any legally binding obligations on Partners (members). Rather, it is an informal political understanding among states that seek to limit the proliferation of missiles and missile technology.

The regime was formed in 1987 by the G-7 industrialized countries (Canada, France, Germany, Italy, Japan, the UK, and the United States). There are currently 35 countries that are members (Partners) of the MTCR.

India has become the 35th full member MTCR in July 2016.

MTCR membership enables India to buy high-end missile technology, strengthen its export control regime and it supports India’s bid to become
India and Nuclear Suppliers Group (NSG)

- The NSG was created in response to India’s first nuclear test ‘Smiling Buddha’ (Pokharan-I) in 1974. The NSG first met in November 1975 in London, thus popularly referred to as the "London Club".
- It’s a group of nuclear supplier countries that seek to contribute to the non-proliferation of nuclear weapons through the implementation of two sets of Guidelines for nuclear exports and nuclear-related exports.
- NSG consists of 48 members, include the five nuclear weapon states US, UK, France, China, and Russia. It is not a formal organization, and its guidelines are not binding.
- A non-NPT state cannot become a member of NSG which keeps India out of the group.
- India was left outside the international nuclear order, which forced India to develop its own resources for each stage of the nuclear fuel cycle and power generation, including next generation reactors such as fast breeder reactors and thorium breeder reactors.
- More recently in January 2019, China has again reiterated its previous stand that India’s accession to the Non-Proliferation Treaty (NPT) is prerequisite for its membership to the NSG or else there should be a common guidelines for the membership of the non-NPT states.
- Rejecting India’s claims for NSG membership, China cited the reasons that there should be no double standards in enforcing the NPT and the international community should stick to multilateralism and promote the three pillars namely non-proliferation, disarmament and peaceful uses of nuclear energy.
- Except China, all P5 members have endorsed India’s membership of NSG based on India’s non-proliferation record.
- Pakistan has also applied for the NSG membership while being also a non-signatory to the NPT. But it has a dubious record and its credibility is very much doubtful as a peaceful nuclear state.
- Membership of the NSG will provide India, greater certainty and a legal foundation for India’s nuclear regime and thus greater confidence for those countries investing billions of dollars to set up ambitious nuclear power projects in India.
- Though India is not a member of NPT and NSG, its track-record in observing the provisions of either body, is impeccable. NSG was able to grant a waiver to India in 2008 on the basis of its past performance, now
The Australia Group admitted India as the 43rd member on 19 January 2018. It’s an informal group that keeps a control over exports of substances used in making of chemical weapons.

- The group membership will help India to raise its stature in the field of non-proliferation, and help in acquiring the critical technologies. It will also strengthen India’s bid to gain NSG membership.

- **Wassenaar Agreement**, established in 1996, is a group of countries which subscribe to arms export controls. It seeks to bring about security and stability, by fostering transparent practices in the process of sale and transfer of arms and materials and technologies that can be used to make nuclear weapons.

- It is a grouping of 42 countries, of which India is the latest entrant on December 8, 2017. With the exception of China, all the other permanent members of the U.N. Security Council are signatories of this arrangement.

- After joining the group India will be able easily access dual use technologies and materials and military equipment that are proscribed for non-participating members. In addition India will also be able to sell its nuclear reactors and other materials and equipment indigenously produced without attracting adverse reactions.

**Way Forward**

- In his presidential address at the first International Conference on the Peaceful Uses of Atomic Energy in Geneva in August 1955, Homi J Bhabha, traced the growth of the civilization, correlating it with increase in energy consumption and the development of new energy sources.

- He emphasized that the acquisition by man of the knowledge of how to release and use atomic energy must be recognized as the third epoch of human history.

- To maintain pace of development, it is important to build a constant and reliable supply chain of nuclear materials.

- The fundamentals underlying the possibility of breakthrough growth in India’s civil nuclear programme are strong: political will, bilateral agreements with most supplier countries, an NSG waiver for nuclear trade, domestic human resources and capability developed in the last 30 years of nuclear power operations.

- While the political will and commitment to nuclear power remains strong, the government in recent months tried hard to secure membership in the NSG, an effort that was ultimately unsuccessful.
It is crucial to remember that India does not need NSG membership to import nuclear technology that was already cleared through the exemption given in 2008.

India’s Stand on different Nuclear Treaties

- **Limited Ban Treaty:** US, UK and USSR in 1963, signed this treaty. It allows nuclear tests only underground thus, prohibits the nuclear experiments on ground, underwater and in outer space. India has also ratified the treaty.
- **Treaty on Outer Space:** Signed in 1967, it prohibits countries to test nuclear weapons in orbit or on celestial bodies like moon.
- **Nuclear Non-Proliferation Treaty (NPT):** Signed in 1968, the treaty entered into force in 1970, now has 190 member states. It requires countries to give up any present or future plans to build nuclear weapons in return for access to peaceful uses of nuclear energy.
- Three main objectives of the treaty are non-proliferation, disarmament, and the right to peacefully use nuclear technology.
- **India is one of the only five countries that either did not sign the NPT** or signed but withdrew, thus becoming part of a list that includes Pakistan, Israel, North Korea, and South Sudan.

**Why India didn’t sign the NPT?**

- The quest for freedom of action in an uncertain regional strategic environment and an asymmetric international system dominated by superpowers and China drove India to not sign the NPT and hedge, and to conduct the 1974 test.
- India perceives its nuclear weapons and missile programs as crucial components of its strategic doctrine.
- India rejects the Treaty on the grounds that it perpetuates—at least in the short-term—an unjust distinction between the five states that are permitted by the treaty to possess nuclear weapons, while requiring all other state parties to the treaty to remain non-nuclear weapon states.
- One major point raised by India is that the five authorized nuclear weapons states still have stockpiles of warheads and have shown reluctance to disarmament which also angered some non-nuclear-weapon NPT states.
- For eliminating the last nuclear weapons, the nuclear weapons state requires confidence that the other countries would not acquire nuclear weapons.
- Moreover, India’s pledge of not to use nuclear weapons unless first attacked by an adversary and a self-imposed moratorium on nuclear test since 1998,
established its credibility as a peaceful nuclear power even without joining the treaty.

- Perceived security threats from Pakistan and Pakistan’s ally China and demonstration of a nuclear weapons capability guaranteed New Delhi’s ability to effectively hedge in an asymmetric international system, and a regional strategic environment where New Delhi felt largely cornered.
- Maintaining a degree of political autonomy has driven independent India’s foreign policy choices. Major decisions that New Delhi took in the nuclear realm are representative of that. The grand bargain of NPT was certainly going to restrict India’s policy options.
- Domestic political imperatives also dictated the timing and the rhetoric about the nuclear power.

Comprehensive Test Ban Treaty (CTBT) intends to ban all nuclear explosions - everywhere, by everyone. It opened for signature on 24 September 1996 and since then 182 countries have signed the Treaty, most recently Ghana has ratified the treaty on 14 June 2011.

- The Treaty will enter into force after all 44 States listed in Annex 2 to the Treaty will ratify it. These States had nuclear facilities at the time the Treaty was negotiated and adopted.
- As of August 2011, 35 of these States have ratified the Treaty. Nine States still need to do so: China, the Democratic People’s Republic of Korea, Egypt, India, Indonesia, Iran, Israel, Pakistan and the United States. India, North Korea and Pakistan have not yet signed the Treaty.

Reasons behind India’s rejection to CTBT

- India has always stood by its demand for a nuclear weapons-free world but various procedural, political, and security concerns have stopped India to join the treaty.
- India’s relationship with the CTBT has undergone distinct changes. In 1954, Indian Prime Minister Jawaharlal Nehru championed the cause of a nuclear test ban by calling for a "standstill" agreement. In 1993, India was among those that co-sponsored the call for a test ban treaty. However, in 1996, India’s reservations about the Treaty blocked its adoption by the Conference on Disarmament.
- India, after negotiation was ready to sign the treaty provided United States should presents a schedule for eliminating its nuclear stockpile, a condition the United States rejected.
- India believed that the universal and complete nuclear disarmament should
be the end goal not a mean.

- India considered, Article XIV, the entry-into-force (EIF) clause of the treaty as a violation of its right to voluntarily withhold participation in an international treaty.
- The treaty initially made ratification by states, that were to be a part of the CTBT's International Monitoring System (IMS), mandatory for the treaty’s EIF. Because of this, India withdrew its participation from the IMS.
- The treaty didn’t talk about the disarmament of the stocks by nuclear weapon states.
- Further, the treaty is vague on the ban of laboratory testing of nuclear weapons. It means sophisticated technology of developed countries permit them for laboratory testing and ban on field test only affect the developing countries nuclear programme.
- India’s scientific community believes that accepting the CTBT would hinder India’s strategic nuclear program development and the option to test must be kept open.
- On the security front, India thought that it faced uncertain dangers from Pakistan, and China, which had conducted nuclear tests even while the CTBT was being negotiated.

- **Fissile Material Cut-off Treaty (FMCT)** is a proposed international agreement that would prohibit the production of two main components of nuclear weapons: highly-enriched Uranium and Plutonium.
- An FMCT would provide new restrictions for the five recognized nuclear weapon states (NWS—United States, Russia, United Kingdom, France, and China), and for the four nations that are not NPT members (Israel, India, Pakistan, and North Korea).
- **Missile Technology Control Regime (MTCR)** is not a treaty and does not impose any legally binding obligations on Partners (members). Rather, it is an informal political understanding among states that seek to limit the proliferation of missiles and missile technology.
- The regime was formed in 1987 by the G-7 industrialized countries (Canada, France, Germany, Italy, Japan, the UK, and the United States). There are currently 35 countries that are members (Partners) of the MTCR. India has become the 35th full member MTCR In July 2016.
- MTCR membership enables India to buy high-end missile technology, strengthen its export control regime and it supports India’s bid to become the member of Nuclear Supplier Group (NSG).
The NSG was created in response to India’s first nuclear test ‘Smiling Buddha’ (Pokharan-I) in 1974. The NSG first met in November 1975 in London, thus popularly referred to as the "London Club".

- It’s a group of nuclear supplier countries that seek to contribute to the non-proliferation of nuclear weapons through the implementation of two sets of Guidelines for nuclear exports and nuclear-related exports.

- NSG consists of 48 members, include the five nuclear weapon states US, UK, France, China, and Russia. It is not a formal organization, and its guidelines are not binding.

- A non-NPT state cannot become a member of NSG which keeps India out of the group.

- India was left outside the international nuclear order, which forced India to develop its own resources for each stage of the nuclear fuel cycle and power generation, including next generation reactors such as fast breeder reactors and thorium breeder reactors.

- More recently in January 2019, China has again reiterated its previous stand that India’s accession to the Non-Proliferation Treaty (NPT) is prerequisite for its membership to the NSG or else there should be a common guidelines for the membership of the non-NPT states.

- Rejecting India’s claims for NSG membership, China cited the reasons that there should be no double standards in enforcing the NPT and the international community should stick to multilateralism and promote the three pillars namely non-proliferation, disarmament and peaceful uses of nuclear energy.

- Except China, all P5 members have endorsed India’s membership of NSG based on India’s non-proliferation record.

- Pakistan has also applied for the NSG membership while being also a non-signatory to the NPT. But it has a dubious record and its credibility is very much doubtful as a peaceful nuclear state.

- Membership of the NSG will provide India, greater certainty and a legal foundation for India’s nuclear regime and thus greater confidence for those countries investing billions of dollars to set up ambitious nuclear power projects in India.

- Though India is not a member of NPT and NSG, its track-record in observing the provisions of either body, is impeccable. NSG was able to grant a waiver to India in 2008 on the basis of its past performance, now it should have no objection to admitting the country as a member.

- **Australia Group** admitted India as the 43rd member on 19 January 2018.
It’s an informal group that keeps a control over exports of substances used in making of chemical weapons.

- The group membership will help India to raise its stature in the field of non-proliferation, and help in acquiring the critical technologies. It will also strengthen India’s bid to gain NSG membership.
- **Wassenaar Agreement**, established in 1996, is a group of countries which subscribe to arms export controls. It seeks to bring about security and stability, by fostering transparent practices in the process of sale and transfer of arms and materials and technologies that can be used to make nuclear weapons.
- It is a grouping of 42 countries, of which India is the latest entrant on December 8, 2017. With the exception of China, all the other permanent members of the U.N. Security Council are signatories of this arrangement.
- After joining the group India will be able easily access dual use technologies and materials and military equipment that are proscribed for non-participating members. In addition India will also be able to sell its nuclear reactors and other materials and equipment indigenously produced without attracting adverse reactions.

**Way Forward**

- In his presidential address at the first International Conference on the Peaceful Uses of Atomic Energy in Geneva in August 1955, Homi J Bhabha, traced the growth of the civilization, correlating it with increase in energy consumption and the development of new energy sources.
- He emphasized that the acquisition by man of the knowledge of how to release and use atomic energy must be recognized as the third epoch of human history.
- To maintain pace of development, it is important to build a constant and reliable supply chain of nuclear materials.
- The fundamentals underlying the possibility of breakthrough growth in India’s civil nuclear programme are strong: political will, bilateral agreements with most supplier countries, an NSG waiver for nuclear trade, domestic human resources and capability developed in the last 30 years of nuclear power operations.
- While the political will and commitment to nuclear power remains strong, the government in recent months tried hard to secure membership in the NSG, an effort that was ultimately unsuccessful.
- It is crucial to remember that India does not need NSG membership to import nuclear technology that was already cleared through the exemption given in
With the voluntarily increasing of Nuclear Weapons in the world, the threat and the irreparable damage of its use brought the consideration of world leaders into it. The leaders from the world have come forward to bring various treaties to curb its proliferation and future use. The IAEA promotes adherence to and implementation of International legal instrument on Nuclear Safety adopted under its auspices. This includes the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, as well as the two emergency preparedness and response conventions.

**Convention on Nuclear Safety:**

- Adopted in Vienna, Austria on June 17 1994, and came into force on October 24, 1996, to commit participating states operating land based civil nuclear power plants to maintain a high level of safety by setting international benchmarks to which States would subscribe.
- The basis of the convention is Parties' common interests to achieve higher level of safety to be ensured through regular meetings.
- It obliges parties to submit reports on the implementation of their obligations for "peer review" at meetings that are normally held at IAEA Headquarters.
- As of July 2015, there are 78 state parties to the Convention plus the European Atomic Energy Community. The states that have signed the treaty but have not ratified it include Algeria, Cuba, Egypt, Ghana, Iceland, Israel, Jordan, Kazakhstan, Monaco, Morocco, Nicaragua, Nigeria, Philippines, Sudan, Syria, Tunisia, and Uruguay.
Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste management:

- It is the first legal instrument to address the issue of spent fuel and radioactive waste management safety on a global scale.
- The convention applies to spent fuel resulting from the operation of civilian applications. It also applies to spent fuel and radioactive waste from military or defence programmes if such materials are transferred permanently to and managed within exclusively civilian programmes, or when declared as spent fuel or radioactive waste for the purpose of the Convention by the Contracting Party concerned.
- The states that ratify the Convention agree to be governed by the Convention’s provisions on the storage of nuclear waste, including transport and the location, design, and operation of storage facilities.
- The Convention implements meetings of the state parties that review the states' implementation of the Convention.
- Five review meetings were convened since the Joint Convention entered into force. The fifth review meeting of the Joint Convention was held in May 2015.

Treaty on the Non-Proliferation of Nuclear Weapons (NPT):

- Adopted on June 12 1968 at UN, New York and came into force on March 5th 1970.
- The NPT aims to prevent the spread of nuclear weapons and weapons technology, to foster the peaceful uses of nuclear energy, and to further the goal of disarmament.
- The Treaty establishes a safeguards system under the responsibility of the IAEA, which also plays a central role under the Treaty in areas of technology transfer for peaceful purposes.
- As of August 2016, 191 states have adhered to the treaty, though North Korea, which acceded in 1985 but never came into compliance, announced its withdrawal from the NPT in 2003, following detonation of nuclear devices in violation of core obligations.
- Four UN member states have never accepted the NPT, three of which are
thought to possess nuclear weapons: India, Israel, and Pakistan. In addition, South Sudan, founded in 2011, has not joined.

**South Pacific Nuclear Free Zone Treaty (Rarotonga Treaty):**

- Opened for signature on August 6th 1985, came into force on Dec 11, 1986, a permanent nature treaty which will remain into force indefinitely.
- It was signed by the South Pacific nations of Australia, the Cook Islands, Fiji, Kiribati, Nauru, New Zealand, Niue, Papua New Guinea, the Solomon Islands, Tonga, Tuvalu, Vanuatu and Western Samoa on the island of Rarotonga (where the capital of the Cook Islands is located).
- It formalises a Nuclear -Weapons Free Zone in the South Pacific. The treaty bans the use of testing and possession of Nuclear Weapons within the borders of the zone.
- There are three protocols to the treaty, which have been signed by the five declared nuclear states, with the exception of Protocol 1 for China and Russia who have no territory in the Zone. – no manufacture, stationing or testing in their territories within the Zone – no use against the Parties to the Treaty, or against territories where Protocol 1 is in force – no testing within the Zone
- In 1996 France and the United Kingdom signed and ratified the three protocols. The United States signed them the same year but has not ratified them. China signed and ratified protocols 2 and 3 in 1987. Russia has also ratified protocols 2 and 3 with reservations.

**Treaty on the Southeast Asia Nuclear Weapon-Free Zone (Treaty of Bangkok):**

- It is a Nuclear Weapons Moratorium Treaty between 10 South-east Asian Member states under the auspices of the ASEAN.
- It was opened for signature at the treaty conference in Bangkok, Thailand, on 15 December 1995 and it entered into force on March 28, 1997 and obliges its members not to develop, manufacture or otherwise acquire, possess or have control over nuclear weapons.
- The Zone is the area comprising the territories of the states and their respective continental shelves and Exclusive Economic Zones (EEZ); "Territory" means the land territory, internal waters, territorial sea, archipelagic waters, the seabed and the sub-soil thereof and the airspace above them.
- The treaty includes a protocol under which the five nuclear-weapon states
recognized by the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), namely China, the United States, France, Russia and the United Kingdom (who are also the five permanent members of the United Nations Security Council) undertake to respect the Treaty and do not contribute to a violation of it by State parties. None of the nuclear-weapon states have signed this protocol.

Partial Nuclear Test Ban Treaty (PTBT):

- Also known as the Limited Test Ban Treaty, banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, which prohibits all test detonations of nuclear weapons except for those conducted underground.
- The PTBT was signed by the governments of the Soviet Union, United Kingdom, and United States in Moscow on 5 August 1963 before being opened for signature by other countries.
- The treaty formally went into effect on 10 October 1963. Since then, 123 other states have become party to the treaty. Ten states have signed but not ratified the treaty.
- Negotiations initially focused on a comprehensive ban, but this was abandoned due to technical questions surrounding the detection of underground tests and Soviet concerns over the intrusiveness of proposed verification methods.

Conference on Disarmament (CD):

- A forum established by the International Community to negotiate multilateral arms control and disarmament agreements.
- Established in 1979, it was the forum used by its member states, currently numbering 65, to negotiate the Biological Weapons Convention and the Chemical Weapons Convention.
- It is not formally a United Nations (UN) Organization, but it is linked so because of the personal representation of UN Secretary General. Resolutions adopted by the UN General Assembly often request the conference to consider specific disarmament matters. In turn, the conference annually reports its activities to the Assembly.
- The Conference succeeded the Ten-Nation Committee on Disarmament (1960), the Eighteen-Nation Committee on Disarmament (1962-68) and the Conference of the Committee on Disarmament (1969-78). In the 1990s, the Conference held intensive efforts over three years to draft the Comprehensive Nuclear Test Ban Treaty, which was submitted by
Comprehensive Nuclear-Test Ban Treaty:

- It is a multilateral treaty that bans all nuclear explosions, in all environments by everyone. It was adopted by the United Nations General Assembly on 10 September 1996 but has not entered into force as eight specific states have not ratified the treaty at the time of its adoption.
- As of August 2016, it has 183 signatories of which 166 have ratified it.
- **Obligations:** – Each State Party undertakes not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control. – Each State Party undertakes, furthermore, to refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion.

Fissile Material Cut-off Treaty (FMCT):

- A proposed international treaty to prohibit the further production of fissile materials for nuclear weapons or other explosive devices. Neither this treaty has been negotiated nor have its terms been defined.
- Fissile Material is any material which can be used to create a Nuclear Bomb. It includes high enriched uranium and plutonium (except plutonium that is over 80% Pu-238).
- Plutonium-239 is the isotope most useful for nuclear weapons. Plutonium-239 and 241 are fissile, meaning the nuclei of their atoms can break apart by being bombarded by slow moving thermal neutrons, releasing energy, gamma radiation and more neutrons.

Conclusion: The world has entered a new nuclear age. While the risk of large-scale, world-ending nuclear war has declined, regional instability, the proliferation of weapons and the materials to make them along with emerging threats like cyber and terrorism mean the risk of a single nuclear weapon or device being detonated - by accident, by miscalculation or on purpose - is on the rise. Our current nuclear policies have not adapted to today’s security environment. This status quo is not sustainable, and the consequences of inaction are unacceptable. Unless we adapt our policies and forces to deal with new and emerging threats, global security will remain at serious risk.
NUCLEAR WEAPONS

BILATERAL

- **India-Pakistan Non-Attack Agreement**

The Agreement obligates India and Pakistan to refrain from undertaking, encouraging, or participating in actions aimed at causing destruction or damage to nuclear installations or facilities in each country.

- **Joint Declaration of South and North Korea on the Denuclearization of the Korean Peninsula**

The Joint Declaration was a treaty in which South and North Korea agreed not to possess, produce, or use nuclear weapons, and prohibited uranium enrichment and plutonium reprocessing.

- **Lahore Declaration**

The Lahore Declaration was an agreement between India and Pakistan that called for both to reduce the risk of accidental or unauthorized use of nuclear weapons, among other confidence-building measures.

- **Strategic Arms Limitation Talks (SALT I)**

SALT refers to two rounds of talks between the US and the USSR on nuclear arms control. SALT I (1969-1972) led to the ABM Treaty.

- **Strategic Arms Limitation Talks (SALT II)**

SALT refers to two rounds of talks between the US and the USSR on nuclear arms control. SALT II lasted from 1972-1979.

- **Strategic Offensive Reductions Treaty (SORT)**

The treaty mandates the United States and Russia to mutually decrease and limit strategic nuclear weapons, with each party reserving the right to determine the structure of its strategic offensive arms.

- **Treaty between The United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START)**

New START is an agreement for nuclear arms reduction between the United
States and Russia, establishing a limit on deployed strategic warheads.

- **Treaty between the United States of America and the Union of Soviet Socialist Republics on Strategic Offensive Reductions (START I)**

START I limited the number of strategic nuclear delivery vehicles and warheads. START II complemented START I by attempting to establish further limits on strategic nuclear weapons for each party.

- **Treaty between the United States of America and the Union of Soviet Socialist Republics on Strategic Offensive Reductions (START II)**

START II complemented START I by attempting to establish further limits on strategic nuclear weapons for each party.

- **Treaty between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-range and Shorter-range Missiles (INF Treaty)**

The INF Treaty is a bilateral agreement between the United States and the Soviet Union. It was the first treaty to reduce nuclear arms instead of establishing an arms ceiling.

- **Treaty between the United States of America and the Union of Soviet Socialist Republics on Underground Nuclear Explosions for Peaceful Purposes (PNE Treaty)**

The PNE Treaty allows the United States and the USSR to conduct underground peaceful nuclear explosions at any location under their jurisdiction or control.

- **Treaty on the Limitation of Anti-Ballistic Missile Systems (ABM Treaty)**

The ABM Treaty is an agreement between the United States and Soviet to cease construction of a national anti-ballistic missile system to limit the development and deployment of defensive missiles.

- **US-DPRK Agreed Framework**

The Agreed Framework was an agreement between the United States and North Korea, which called for replacing a North Korean nuclear reactor in exchange for normalizing relations and other incentives.
MULTILATERAL

- **Comprehensive Nuclear-Test-Ban Treaty (CTBT)**

The CTBT prohibits nuclear weapon test explosions. It has not yet entered into force, since three of the 44 required states have yet to sign it and five to ratify it.

- **International Convention on the Suppression of Acts of Nuclear Terrorism**

The Convention covers a broad range of acts and possible targets, including nuclear power plants and nuclear reactors. It criminalizes the planning, threatening, or carrying out acts of nuclear terrorism.

- **Treaty Banning Nuclear Tests in the Atmosphere, in Outer Space and Under Water (Partial Test Ban Treaty) (PTBT)**

The PTBT requires parties to abstain from carrying out nuclear explosions in any environment where such explosions cause radioactive debris outside the limits of the State that conducts an explosion.

- **Treaty on the Non-Proliferation of Nuclear Weapons (NPT)**

Source: TH/Web

---

**Nuclear Race**

**GS-III | 20 June,2021**

China is in the middle of a significant modernisation and expansion of its nuclear weapon inventory, and India and Pakistan also appear to be expanding their nuclear arsenals, according to Swedish think tank Stockholm International Peace Research Institute (SIPRI) Year Book 2021.

Stockholm International Peace Research Institute (SIPRI)
This think tank is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament. It was established in 1966 at Stockholm (Sweden). It provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

The overall number of warheads in global military stockpiles now appears to be increasing, a worrisome sign that the declining trend that has characterized global nuclear arsenals since the end of the cold war has stalled.

**Status of India**: According to the year book, India possessed an estimated 156 nuclear warheads at the start of 2021 compared to 150 at the start of last year, while Pakistan had 165 warheads, up from 160 in 2020. China’s nuclear arsenal consisted of 350 warheads up from 320 at the start of 2020.

**The nine nuclear armed states - the U.S., Russia, the U.K., France, China, India, Pakistan, Israel and North Korea** - together possessed an estimated 13,080 nuclear weapons at the start of 2021. Russia and the U.S. together possessed over 90% of global nuclear weapons and have extensive and expensive modernisation programmes under way, SIPRI said.

**IISS report**

A report by the International Institute for Strategic Studies (IISS), London, in May titled ‘Nuclear Deterrence and Stability in South Asia: Perceptions and Realities’ said that chance played an important ameliorative role in the India-Pakistan crisis of February 2019 and the two countries “risk stumbling into using their nuclear weapons through miscalculation or misinterpretation in a future crisis.

India and Pakistan are seeking new technologies and capabilities that dangerously undermine each other’s defence under the nuclear threshold. Whatever they learn from past crises, the uncharted territory they are now exploring requires enlightened judgement about their doctrines, their nuclear and conventional capabilities, and their unpredictable implications in future crises,” said the report by Antoine Levesques, Research Fellow at the IISS.
as the lead author.

- Listing several Confidence Building Measures and other practical steps in this direction, it concluded that a robust, trusted, reliable, deniable back channel between the leaderships is the most promising means by which India and Pakistan could achieve greater strategic and nuclear deterrence stability.

- The five largest suppliers in 2016-20 - the United States, Russia, France, Germany and China - accounted for 76% of the total volume of exports of major arms.

Largest Military Spenders:

- The growth in total spending in 2020 was largely influenced by expenditure patterns in the United States and China (first and second largest spenders respectively).
- India’s spending of USD 72.9 billion, an increase of 2.1% in 2020, ranked it as the third highest spender in the world.

Importers of Major Arms:

- SIPRI identified 164 states as importers of major arms in 2016-20.
- Country Wise: The five largest arms importers were Saudi Arabia, India, Egypt, Australia and China, which together accounted for 36% of total arms imports.
- Region wise: The region that received the largest volume of major arms supplies in 2016-20 was Asia and Oceania, accounting for 42% of the global total, followed by the Middle East, which received 33%.

What are the Treaties related to Nuclear Arsenals?

- The Treaty on the Non-Proliferation of Nuclear Weapons (NPT).
- The Treaty Banning Nuclear Weapon Tests In The Atmosphere, In Outer Space And Under Water, also known as the Partial Test Ban Treaty (PTBT).
- The Comprehensive Nuclear-Test-Ban Treaty (CTBT) was signed in 1996 but has yet to enter into force.
- The Treaty on the Prohibition of Nuclear Weapons (TPNW), which will enter into force on 22nd January 2021.
- Nuclear Suppliers Group, the Missile Technology Control Regime, the Hague Code of Conduct against Ballistic Missile Proliferation, and the Wassenaar Arrangement.

The NPT is an international treaty whose objective is to prevent the spread of nuclear weapons and weapons technology, to foster the peaceful uses of nuclear energy, and to further the goal of disarmament. It represents the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States.

Nuclear-weapon states parties under the NPT are defined as those that manufactured and exploded a nuclear weapon or other nuclear explosive device before January 1, 1967. India did not sign it as the treaty was discriminatory. India argued that treaties like NPT were selectively applicable to only non-nuclear powers and legitimized the monopoly of nuclear power by a few.

Consequently India conducted nuclear explosion test in May 1974, all along maintaining that it was committed to peaceful use of atomic energy. In 1998, India again conducted a nuclear explosion tests, and acquired the capacity to use nuclear energy for military purposes.

To alleviate the fears of a world community, India formulated a comprehensive nuclear doctrine. The major tenets of this doctrine are:

- Maintenance of a credible minimum nuclear deterrence.
- Professes no first use policy.
- Commitment to global veritable and non-discriminatory nuclear disarmament leading to a nuclear weapons free world.

India has abided by both NPT and Comprehensive Nuclear-Test-Ban Treaty (CTBT) even though it is a non-signatory. This along with its commitments on nuclear non-proliferation under NSG waiver in 2008 provides India with a strong basis for membership in NSG.

CTBT

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) is the treaty banning all nuclear explosions - everywhere, by everyone.

The Treaty was negotiated at the Conference on Disarmament in Geneva and adopted by the United Nations General Assembly. It opened for signature on 24 September 1996.

Source: TH
National Human Rights Commission and State Human Rights Commission, 1993

What is the news?

- The Calcutta High Court has directed the Chairperson of the National Human Rights Commission (NHRC) to constitute a committee to examine complaints of post-poll violence in West Bengal.
- A Bench of five judges directed that the committee “shall examine all the cases, and maybe by visiting the affected areas, and submit a comprehensive report to this court about the present situation”.
- The court asked the committee to suggest “steps to be taken to ensure confidence of the people that they can peacefully live in their houses and also carry on their occupation or business to earn their livelihood”. The order, issued on June 18, directed that “the persons prima facie responsible for crime and the officers who maintained calculated silence on the issue be pointed out”.

NHRC and SHRC, 1993

- Both are Statutory Autonomous bodies established under Protection of Human Rights Act, 1993.
- It is the watchdog of Human Rights in India. They are Rights w.r.t. Life, Liberty, Equality & dignity guaranteed by Constitution or of International Covenants. Accordingly 25 States have constituted SHRCs through official Gazette Notifications.

<table>
<thead>
<tr>
<th>NHRC</th>
<th>SHRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Composition</strong> of NHRC: Chairman, 4 members and 4 Ex-officio members.</td>
<td>1.</td>
</tr>
</tbody>
</table>
| 2. **Qualifications** for NHRC:  
  1. **Chairperson** should be a Retd. CJI and  
  2. **Members** should be Serving or |
| | |
**Retired Judge of SC, a Serving or Retd CJHC and 2 persons having practical experience of Human Rights.**

3. **4 Ex-officio members** are Chairmen Of National Commission of Minorities, SCs, STs, Women.

3. **Appointment by Prez** on the recommendations of a 6 member Committee: PM as its head, Speaker of Lok Sabha, Deputy Chairman of Rajya Sabha, Leader of Opposition in both Houses of Parliament and Home Minister.

4. Further, a sitting Judge of SC or a sitting Chief Justice of HC can be appointed only after consultation of CJI.

| Retired Judge of HC or Dist Judge in the State for > 7 years’ experience and having knowledge or practical experience of human rights. |
| Retd. Judge of HC or Dist Judge in the State for > 7 years’ experience and having knowledge or practical experience of human rights. |

3. **Appointment by Gov (but removal by Prez)** on the recommend of a Committee consisting of CM as its head, Speaker of Legislative Assembly, State Home Minister and Leader of Opposition of Legislative Assembly. If State has LC, then the committee also has Chairman of LC and Leader of Opposition of LC. Further, a sitting JoHC or a sitting Dist Judge can be appointed only after consultation of CJHC of the State concerned.

- **Tenure (of both NHRC & SHRC): 3 years or 70 years** whichever is earlier. **Not eligible for further Employment** under Center or States.
- **Removal (of both NHRC & SHRC) by Prez**: (Same as of UPSC, CVC, CIC) Removal is done only by Prez under the following conditions:
  1. If he has gone bankrupt or If, according to Prez, he is of unsound mind or If he is involved in paid employment outside the duties of office.
  2. Prez can also remove her in case of Misbehavior or incapacity (defined in Constitution), Prez refers this matter to SC. **SC’s decision is binding on Prez.** Then he may remove. During the course of enquiry by the SC, Prez can suspend them.
- The salary, allowances & service conditions are determined by C / S govt & can’t be varied to his disadvantage post appointment.
- **Functions of Both**:
  1. To strengthen the institutional arrangements through which human rights could be addressed in their entirety and in a more focused manner.
  2. To inquire into any violation of Human Rights, **either suo motu or on a petition** presented to it or an order of a Court. **SHRC can only enquire**
into matters related w State List or Concurrent List of the 7th Schedule of the Constitution. However if any such cases is enquired by NHRC or any other Statutory Commission, then SHRC doesn’t inquire into that case.

3. To intervene in any proceeding involving allegation of violation of Human rights pending before a Court.

4. To visit jails or detention places, study the living conditions of inmates and make recommendations.

5. To review the Constitution and legal safeguards for the protection of HRs and make recommendations.

6. To review the factors including acts of terrorism that inhibit the enjoyment of rights and recommend remedial measures.

7. To promote the literacy and encourage the efforts of NGOs working in this direction.

8. To study treaties and international agreements on Human Rights and make recommendations.

9. To undertake and promote research in the field of Human Rights.

10. To undertake such other functions as it may consider necessary for the promotion of human rights.

**Working:**

1. It can't by itself punish the guilty. That is the responsibility of courts. It makes independent and credible enquiry into any case of violation of human rights. Also if any govt officer neglects.

2. It regulates its own procedure. It has all the powers of a Civil Court and its proceedings have a judicial character. It may call for info or reporty from C & S govts or any subordinate authority.

3. The NHRC has its own nucleus of working staff for investigation. Besides, it is empowered to utilize the services of any officer or investigating agency of C or S govt. It has also established effective coop with NGOs with 1st hand info about HR violations.

4. It can only look into the matter of violation within 1 year of its occurrence and not after that.

5. After enquiry, It may recommend the concerned government or authority

   1. To make payment of compensation or damages to the victim.
   2. The initiation of proceedings or any other action against the guilty public servant.
   3. For the grant of immediate interim relief to the victim.

6. It may approach the SC or HC concerned for the necessary directions, orders and writs.

7. It can summon witnesses, question any govt official, demand any official paper, visit any prison for inspection or send it's own team for on the
spot inquiry.

**Criticisms:**
1. It has **no power to punish** the violators of Human Rights **nor can it provide any relief** to the victim.
2. The functions are mainly **recommendatory** in nature. **Not binding.** But it should be informed about the action taken on its recommendations within 1 month.
3. The Commission has a **limited role, powers and jurisdiction** wrt violation of human rights by the member of Armed forces. In this sphere NHRC may seek a report from Govt and make recommendations. Center has to inform on actions taken within 3 months.
4. Yet the govt considers cases forwarded by it. It is therefore improper to say that the Commission is powerless. It enjoys great material authority and no govt can ignore its recommendations.
5. NHRC submits its annual report to Central govt and State govt concerned. SHRC submits to State govt.

**Protection of Human Rights Act, 1993 also provides for the establishment of Human Rights Courts:**
1. Acc to the act, HRC can be est in every district for speedy trial of violation of Human Rights.
2. These Courts can be set up by the State govt only w the concurrence of concerned CJHC.
3. For every HRC, State govt specifies a public prosecutor or appoints an advocate (practice > 7 years) as a special public prosecutor.

**4. Protection of Human Rights (Amendment) Act, 2006**
1. NHRC can undertake visits to jails even without intimation to State Govt.
2. Chariman and members of NHRC resign to Prez, and SHRC resign to Guv.
3. NHRC can transfer complaints received by it to SHRCs.

Source: TH
The event will bring together leaders from eight SCO member states—India, China, Kazakhstan, Kyrgyzstan, Russia, Pakistan, Tajikistan, and Uzbekistan.

National Security Adviser Ajit Doval is expected to attend a meeting of the Shanghai Cooperation Organisation in Dushanbe, Tajikistan next week, which Pakistan’s NSA Moeed Yusuf will attend as well.

The Shanghai Cooperation Organisation, also known as the Shanghai Pact,
is a Eurasian political, economic, and military organisation which was founded in 2001 in Shanghai.

- **Founding members**: China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. The cooperation was renamed to Shanghai Cooperation Organisation after Uzbekistan joined the organisation in 2001.

- **The SCO’s main goals are**:
  1. Strengthening mutual trust and neighbourliness among the member states;
  2. Promoting their effective cooperation in politics, trade, the economy, research, technology and culture, as well as in education, energy, transport, tourism, environmental protection, and other areas;
  3. Making joint efforts to maintain and ensure peace, security and stability in the region; and
  4. Moving towards the establishment of a democratic, fair and rational new international political and economic order.

- **Presently, the SCO comprises eight member states**, namely the Republic of India, the Republic of Kazakhstan, the People’s Republic of China, the Kyrgyz Republic, the Islamic Republic of Pakistan, the Russian Federation, the Republic of Tajikistan, and the Republic of Uzbekistan.

- India and Pakistan joined the SCO as full members in 2017.

- **The SCO counts four observer states**, namely the Islamic Republic of Afghanistan, the Republic of Belarus, the Islamic Republic of Iran and the Republic of Mongolia.

- **The SCO has six dialogue partners**, namely the Republic of Azerbaijan, the Republic of Armenia, the Kingdom of Cambodia, the Federal Democratic Republic of Nepal, the Republic of Turkey, and the Democratic Socialist Republic of Sri Lanka.

- **The SCO Summits**
  1. 2019 Summit - **Bishkek**, Kyrgyzstan
  2. 2020 Summit – **St. Petersbourgh**, Russia. Theme- Reformed Multilateralism
  3. The 2021 Summit will be chaired by Tajikistan in **Dushanbe**.
About Regional Anti-Terrorist Structure (RATS)

- The Regional Anti-Terrorist Structure (RATS), headquartered in Tashkent,
Uzbekistan, is a permanent organ of the SCO.
- It serves to promote cooperation of member states against the three evils of terrorism, separatism and extremism.
- The Head of RATS is elected to a three-year term. Each member state also sends a permanent representative to RATS.

Source: TH

Delimitation Commission for Jammu & Kashmir

What is the news?
- The Delimitation Commission for the Union Territory of Jammu and Kashmir has kicked off the exercise by writing to all 20 District Commissioners (DC), seeking basic demographic, topographic information as well as the local administration’s impressions of political aspirations of the district.
- The Commission was set up in February-March 2020 to delineate Assembly and parliamentary constituencies, and was given a year’s extension last March.
- It is only after the completion of the delimitation exercise that elections for the Assembly can be held, although District Development Council (DDC) polls were held last year on earlier patterns and based on the 2011 Census.
- The then State of Jammu and Kashmir was kept out of the delimitation exercise when it was carried out in the rest of country (between 2002-2008), as delimitation of Assembly seats was under the Jammu and Kashmir Constitution and its separate Representation of People Act.
- After becoming a Union Territory, the Delimitation Commission was constituted and asked to mark out Assembly and Parliament seats.
- The Commission, headed by Justice (retired) Ranjana Prakash Desai and comprising two other members, had called for a meeting in February 2021, where only two of its five associate members — Union Minister Jitendra Singh and Jugal Kishore Singh, MP — attended. National Conference leaders Dr. Farooq Abdullah and Hasnain Masoodi, MP, and Mohammad Akbar Lone did
The renewed push by the Centre for talks has raised hopes not only of early Assembly elections in Jammu and Kashmir but also of an eventual restoration of statehood, which was taken away under the Jammu and Kashmir Reorganisation Act, 2019, a reading down of Article 370 of the Constitution.

Why Delimitation is important?

- To provide equal representation to equal segments of a population.
- Fair division of geographical areas so that one political party doesn’t have an advantage over others in an election.
- To follow the principle of “One Vote One Value”.

Constitutional Provisions regarding Delimitation:

- Under Article 82, the Parliament enacts a Delimitation Act after every Census.
- Under Article 170, States also get divided into territorial constituencies as per Delimitation Act after every Census.
- Once the Act is in force, the Union government sets up a Delimitation Commission.
- The first delimitation exercise was carried out by the President (with the help of the Election Commission) in 1950-51.
- The Delimitation Commission Act was enacted in 1952.
- There was no delimitation after the 1981 and 1991 Censuses.

Delimitation Commission

- The Delimitation Commission is appointed by the President of India and works in collaboration with the Election Commission of India.
- Composition: Retired Supreme Court judge, Chief Election Commissioner and Respective State Election Commissioners.
- Functions:
  1. To determine the number and boundaries of constituencies to make population of all constituencies nearly equal.
  2. To identify seats reserved for Scheduled Castes and Scheduled Tribes, wherever their population is relatively large.
  3. In case of difference of opinion among members of the Commission, the opinion of the majority prevails.
- The Delimitation Commission in India is a high power body whose orders
have the force of law and cannot be called in question before any court.

Source: TH
Food and Agricultural Organisation (FAO)

- FAO is a **specialised agency of UN** that leads international efforts to defeat hunger.
- **Headquarters:** Rome, Italy
- **Founded on:** 16 October 1945. **World Food Day** is celebrated every year on 16th October to mark the anniversary of the founding of the FAO in 1945.
- India is a member of FAO. Its sister bodies are the World Food Programme and the International Fund for Agricultural Development (IFAD).
- **Goal of FAO:**
  1. Achieve food security for all and accessibility;
  2. Raise nutrition levels and standard of living by improving agricultural productivity.
- FAO Council approved India’s proposal to observe an **International Year of Millets in 2023**.
- **Committee on World Food Security** reviews policies of food production, physical and economic access to food. India is a member.
- **Initiatives of FAO:**
  2. It monitors the Desert Locust situation throughout the world.
  3. The **Codex Alimentarius Commission** or CAC is the body responsible for all matters regarding the implementation of the Joint FAO/WHO Food Standards Programme.
  4. The **International Treaty on Plant Genetic Resources for Food and Agriculture**.
- **Reports:**
  1. World Food Price Index.
  3. The State of World Fisheries and Aquaculture (SOFIA).
  5. The State of Food and Agriculture (SOFA).

GIAHS (Globally Important Agricultural Heritage Systems) is a programme of FAO.
It aims to protect Traditional Agri systems. It will not provide any modern technology and training.

GIAHS aims to identify and safeguard eco friendly traditional farm practices and their associated landscapes, agri biodiversity and knowledge systems of local communities.

GI is not given to traditional agri systems but given to products from a certain origin.

Across the World, 37 sites are designated as GIAHS by FAO of which 3 are Indian = Saffron (Kashmir), Traditional Agriculture (Koraput) and Below Sea level Farming (Kuttanad).

Other Indian Genetic Resources include Konamanu (TN), Agni Bora (Assam) and Pokkali (Kerala), Gucchi (Mushroom) and Bhalia Wheat from HP. Moringa (Drumstick) has micro nutrients and sweet potato is rich in Vitamin A. Also there are different pearl millets and sorghum rich in iron & zinc.

42nd FAO Conference: India’s efforts in COVID 19

- Significant Policy and legislative decisions were taken during this period to liberalize agri marketing to transform Indian agriculture for the benefit of farmers and consumers.
- Special parcel trains with refrigeration facilities “the KISAN RAIL” were introduced by Indian Railways to transport the essential commodities including perishable horticulture produce, milk and dairy produce from the production centres to the large urban markets across our vast country creating a win-win situation for the producers and consumers.
- To improve the situation of our workers and to provide them relief during Covid Pandemic the Government of India launched the “Pradhan Mantri Garib Kalyan Package”. Under this scheme, free food grains were provided to 810 million beneficiaries and now, in May, the scheme has been further extended in which workers will be benefited till November.
- More than Rupees 137000 Crore have been sent to the bank accounts of over 100 million farmers under the “PM Kisan” Scheme to provide income support to the farmers.

Source: PIB
Black Softshell Turtle Conservation in Assam

- A major temple in Assam has signed a memorandum of understanding with two green NGOs, the Assam State Zoo-cum-Botanical Garden and the Kamrup district administration for the long-term conservation of the rare freshwater black softshell turtle or the *Nilssonia nigricans*.

- A vision document 2030 was also launched after Turtle Survival Alliance India and Help Earth signed the pact involving the Hayagriva Madhava Temple Committee. The temple, revered by both Hindus and Buddhists, is at Hajo, about 30 km northwest of Guwahati.
- Until sightings along the Brahmaputra’s drainage in Assam, the black softshell turtle was thought to be “extinct in the wild” and confined only to ponds of temples in northeastern India and Bangladesh.
- The International Union for Conservation of Nature had in 2021 listed the turtle as “critically endangered”.
- But it does not enjoy legal protection under the Indian Wildlife
Protection Act of 1972, although it has traditionally been hunted for its meat and cartilage, traded in regional and international markets.

- Various temple ponds in Assam such as that of the Hayagriva Madhava Temple harbour various threatened species of turtles. Since the turtles are conserved in these ponds only based on religious grounds, many biological requirements for building a sustainable wild population have since long been overlooked.
- This multi-stakeholder association [conservation pact] aims to restock the wild with viable, self-sufficient and genetically pure threatened turtle populations in the region.
- We will offer assistance for the required improvement of husbandry of turtles kept in such ponds, and further recovery efforts are recommended for the long-term survival and existence of the endangered freshwater turtles.

<table>
<thead>
<tr>
<th>Tortoise</th>
<th>Turtle</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. <strong>Land dwelling</strong> Ex. Galapagos and Aldabara Tortoise = Seychelles.</td>
<td>2. <strong>Water dwelling.</strong> All oceans.</td>
</tr>
<tr>
<td>3. Asia, Africa and <strong>Galapagos (South America).</strong></td>
<td>3. America and Africa.</td>
</tr>
<tr>
<td>4. <strong>Large dome shaped bump on top.</strong></td>
<td>4. Mostly flat. Light in weight.</td>
</tr>
<tr>
<td>5. Limbs or feet short and sturdy with bent legs.</td>
<td>5. Have flappers with long claws.</td>
</tr>
<tr>
<td>6. <strong>Herbivores:</strong></td>
<td>6. <strong>Omnivores:</strong></td>
</tr>
<tr>
<td>7. Tortoise hatching move from nest to mother borrow.</td>
<td>7. Stay in nest from 90 - 100 days.</td>
</tr>
<tr>
<td>8. 200 - 250 years.</td>
<td>8. 40 - 60 years.</td>
</tr>
</tbody>
</table>

**Turtles:**

- There are 5 species in Indian waters —
  1. Leatherback (Vulnerable),
  2. **Loggerhead (Endangered),**
  3. Hawksbill (Critically Endangered),
  4. Green (Endangered) and
5. Olive Ridley Turtles (Vulnerable).
- In India, sea turtles are protected under the WPA, 1972.
- **Olive ridley turtles**
  1. They are the **smallest** and **most abundant** of all sea turtles found in the world, inhabiting warm waters of the **Pacific, Atlantic and Indian oceans**.
  2. They are well known for its **arribadas**, or **annual mass nestings** when thousands of turtles migrate to the breeding ground to nest simultaneously.
  3. They are recognized as **Vulnerable** in IUCN; **Appendix I** of CITES.
  4. Nesting sites are
     1. Dharmara River (Brahmani); Devi River (Mahanadi)
     2. Rishikulya River, Gahirmatha beach, Astaranga coast of Odisha
     3. **Hope Island** of Coringa Wildlife Sanctuary (Andra Pradesh)
  5. **Odisha has half of the world’s Olive Ridley turtle population** and 90% of India’s turtle population lives in the state.
  6. MoEF initiated the **Sea Turtle Conservation Project** in collaboration with **UNDP** in 1999 with WII, Dehradun as the implementing agency.
  7. ‘**Operation Kachhapa**: Conservation of the Olive Ridley Sea Turtle was launched by the **Wildlife Protection Society of India in collaboration with the Orissa State Forest Department and the Wildlife Society of Orissa and other local NGOs**.
  8. To reduce accidental killing in India, the Orissa government has made it **mandatory** for trawls to use **Turtle Excluder Devices (TEDs)**, a net specially designed with an exit cover which allows the turtles to escape while retaining the catch.
  9. **Odisha celebrates 1st Turtle Festival in Puri** to create awareness to conserve Olive Ridley Turtles.
- **Assam Roofed Turtle** is a small freshwater turtle. It is in India and Bangladesh: **Endangered** in IUCN, **Appendix II** of CITES and **Schedule 1** of WPA.

Source: TH
IT Rules 2021 and analysis

- The Kerala High Court restrained the Centre from taking coercive action against Live Law Media Private Ltd., which owns a legal news portal, for not complying with Part III of the new IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.
- The court issued notice to the Centre on a petition filed by the firm challenging the rules regulating digital news media, curated content (OTT platforms), and social media intermediaries.
- The petition said Part III of the rules imposed an unconstitutional three-tier complaints and adjudication structure on publishers.
- This administrative regulation on digital news media would make it virtually impossible for small or medium-sized publishers, such as the petitioner, to function. It would have a chilling effect on such entities, the petition said.
- The creation of a grievance redressal mechanism, through a governmental
oversight body (an inter-departmental committee constituted under Rule 14) amounted to excessive regulation, it contended.

- The petitioner pointed out that Rule 4(2), which makes it mandatory for every social media intermediary to enable tracing of originators of information on its platform, purportedly in furtherance of Section 69 of the IT Act, violated Article 19(1)(a) (freedom of speech and expression).
- It also deprived the intermediaries of their “safe-harbour protections” under Section 79 of the IT Act.
- The petition also added that the rules obligating messaging intermediaries to alter their infrastructure to “fingerprint” each message on a mass scale for every user to trace the first originator was violative of the fundamental right to privacy of Internet users.

Summary of IT Rules 2021
Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 have been framed under the Information Technology Act, 2000, and it supersedes the IT Rules, 2011.

It will ensure a harmonious, soft-touch oversight mechanism in relation to social media platform, digital media and OTT platforms etc.

Part- II of these Rules to Social Media shall be administered by Ministry of Electronics and IT.

These Rules empower the users of digital platforms to seek redressal for their grievances on infringement of their rights.

If due diligence is not followed by the intermediaries, including social media, safe harbour provisions will not apply to them.

Grievance Officer, appointed by intermediaries, shall acknowledge the complaint within 24 hours and resolve it within 15 days.

Ensures online safety and dignity of users, especially women, by
removing or disabling the contents within 24 hours of receipt of complaints of contents.

- A distinction between social media intermediaries and significant social media intermediaries is made, based on the number of users.
- Chief Compliance Officer shall be appointed for ensuring compliance with the Act and Rules.
- Nodal Contact Person shall be appointed for 24x7 coordination with law enforcement agencies.
- Part-III on Ethics Code in relation to digital media shall be administered by the Ministry of Information and Broadcasting.
- This Code of Ethics prescribes the guidelines to be followed by OTT platforms and online news and digital media entities.
- OTT platforms would self-classify the content into 5 age based categories - U (Universal), U/A 7+, U/A 13+, U/A 16+, A (Adult).
- Publishers of digital news would observe Norms of Journalistic Conduct of the Press Council of India and the Programme Code under the Cable Television Networks Regulation Act.
- A three-level grievance redressal mechanism has been established under the rules with 3 levels of self-regulation.


- These new rules broadly deal with social media and over-the-top (OTT) platforms.
- These rules have been framed in exercise of powers under section 87 (2) of the Information Technology (IT) Act, 2000 and in supersession of the earlier Information Technology (Intermediary Guidelines) Rules 2011.

Following are the features of the new rules

1. Categories of Social Media Intermediaries:

   Based on the number of users, on the social media platform intermediaries have been divided in two groups:

   1. Social media intermediaries.
   2. Significant social media intermediaries.

2. Due Diligence to be Followed by Intermediaries:
In case, due diligence is not followed by the intermediary, safe harbour provisions will not apply to them.
The safe harbour provisions have been defined under Section 79 of the IT Act, and protect social media intermediaries by giving them immunity from legal prosecution for any content posted on their platforms.

3. Grievance Redressal Mechanism is Mandatory:
- Intermediaries shall appoint a Grievance Officer to deal with complaints and share the name and contact details of such officers.
- Grievance Officer shall acknowledge the complaint within twenty four hours and resolve it within fifteen days from its receipt.

4. Ensuring Online Safety and Dignity of Users:
- Intermediaries shall remove or disable access within 24 hours of receipt of complaints of contents that exposes the private areas of individuals, show such individuals in full or partial nudity or in sexual act or is in the nature of impersonation including morphed images etc.
- Such a complaint can be filed either by the individual or by any other person on his/her behalf.

5. Additional Due Diligence for the Significant Social Media Intermediaries:
- Appointments: Need to appoint Chief Compliance Officer, a Nodal Contact Person and a Resident Grievance Officer, all of whom should be resident in India.
- Compliance Report: Need to publish a monthly compliance report mentioning the details of complaints received and action taken on the complaints as well as details of contents removed proactively.

6. Enabling Identity of the Originator:
- Significant social media intermediaries providing services primarily in the nature of messaging shall enable identification of the first originator of the information.
- Required only for the purposes of prevention, detection, investigation, prosecution or punishment of an offence related to sovereignty and integrity of India, the security of the State, friendly relations with foreign States, or public order,
- Or of incitement to an offence relating to the above or in relation with rape, sexually explicit material or child sexual abuse material punishable with
imprisonment for a term of not less than five years.

7. Removal of Unlawful Information:

- An intermediary upon receiving actual knowledge in the form of an order by a court or being notified by the Appropriate Govt. or its agencies through authorized officer should not host or publish any information which is prohibited under any law in relation to the interest of the sovereignty and integrity of India, public order, friendly relations with foreign countries etc.

Rules for News Publishers and OTT Platforms and Digital Media:

For OTT:

- Self-Classification of Content: The OTT platforms, called as the publishers of online curated content in the rules, would self-classify the content into five age based categories- U (Universal), U/A 7+, U/A 13+, U/A 16+, and A (Adult).
- Parental Lock: Platforms would be required to implement parental locks for content classified as U/A 13+ or higher, and reliable age verification mechanisms for content classified as “A”.
- Display Rating: Shall prominently display the classification rating specific to each content or programme together with a content descriptor informing the user about the nature of the content, and advising on viewer description (if applicable) at the beginning of every programme enabling the user to make an informed decision, prior to watching the programme.

For Publishers of News on Digital Media:

- They would be required to observe Norms of Journalistic Conduct of the Press Council of India and the Programme Code under the Cable Television Networks Regulation Act 1995 thereby providing a level playing field between the offline (Print, TV) and digital media.

Grievance Redressal Mechanism:

A three-level grievance redressal mechanism has been established under the rules with different levels of self-regulation.

1. Level-I: Self-regulation by the publishers;
2. Level-II: Self-regulation by the self-regulating bodies of the publishers;
3. Level-III: Oversight mechanism.
Self-regulation by the Publisher:

- Publisher shall appoint a Grievance Redressal Officer based in India who shall be responsible for the redressal of grievances received by it.
- The officer shall take decision on every grievance received by it within 15 days.

Self-Regulatory Body:

- There may be one or more self-regulatory bodies of publishers.
- Such a body shall be headed by a retired judge of the SC, a High Court or independent eminent person and have not more than six members.
- Such a body will have to register with the Ministry of Information and Broadcasting.
- This body will oversee the adherence by the publisher to the Code of Ethics and address grievances that have not been resolved by the publisher within 15 days.

Oversight Mechanism:

- Ministry of Information and Broadcasting shall formulate an oversight mechanism.
- It shall publish a charter for self-regulating bodies, including Codes of Practices. It shall establish an Inter-Departmental Committee for hearing grievances.

Source: TH
Water pollution

Water pollution is the addition/presence of undesirable substances to/in water such as organic, inorganic, biological, radiological, heat, which degrades the quality of water so that it becomes unfit for use.

Natural sources of pollution of water are soil erosion, leaching of minerals from rocks (due to natural solubility and solubility triggered by acid rain) and decaying of organic matter.

Click for more data on water pollution and it effects in India – Aspire IAS website - Water Resources, AspireIAS website- Water Borne Diseases.

Point and Non-point sources of pollution

- When pollutants are discharged from a specific location such as a drain pipe carrying industrial effluents discharged directly into a water body it represents point source pollution.
- In contrast, non-point sources include discharge of pollutants from diffused sources or from a larger area such as runoff from agricultural fields, grazing lands, construction sites, abandoned mines and pits, etc.

Causes of Water Pollution

1. Sewage Water- Sewage water includes discharges from houses and other establishments.

The sewage contains human and animal excreta, food residues, cleaning agents, detergents, etc.

Domestic and hospital sewage contain many undesirable pathogenic microorganisms.

2. Dissolved Oxygen (DO)
   - Presence of organic and inorganic wastes in water decreases the dissolved
oxygen content of the water.

- Water having DO content below 8.0 mg/L may be considered as contaminated.
- Water having DO content below 4.0 mg/L is considered to be highly polluted.
- DO content of water is important for the survival of aquatic organisms.
- A number of factors like surface turbulence, photosynthetic activity, O2 consumption by organisms and decomposition of organic matter are the factors which determine the amount of DO present in water.
- The higher amounts of waste increase the rates of decomposition and O2 consumption thereby decreases the DO content of water.

3. Biological Oxygen Demand (BOD)

- Water pollution by organic wastes is measured in terms of Biochemical Oxygen Demand (BOD).
- BOD is the amount of dissolved oxygen needed by bacteria in decomposing the organic wastes present in water. It is expressed in milligrams of oxygen per litre of water.
- The higher value of BOD indicates low DO content of water.
- Since BOD is limited to biodegradable materials, it is not a reliable method of measuring water pollution.

Biological Oxygen Demand (BOD) is a standard criterion for?

a. Measuring oxygen levels in blood
b. Computing oxygen levels in forest ecosystems
c. Pollution assay in aquatic ecosystems
d. Assessing oxygen levels in high altitude regions

Ans: c

4. Chemical oxygen demand (COD)

- Chemical oxygen demand (COD) is a slightly better mode used to measure pollution load in the water.
- COD measures the amount of oxygen in parts per million required to oxidise organic (biodegradable and non-biodegradable) and oxidizable inorganic compounds in the water sample.
5. Industrial Wastes

- Discharge of wastewater from industries like petroleum, paper manufacturing, metal extraction and processing, chemical manufacturing, etc., that often contain toxic substances, notably, heavy metals (defined as elements with density > 5 g/cm³ such as mercury, cadmium, copper, lead, arsenic) and a variety of organic compounds.

6. Agricultural sources

- **Agricultural runoff** contains dissolved salts such as nitrates, phosphates, ammonia and other nutrients, and toxic metal ions and organic compounds.
- Fertilizers contain major plant nutrients such as nitrogen, phosphorus and potassium.
- Excess fertilisers may reach the groundwater by leaching or may be mixed with surface water.
- **Pesticides** include insecticides, fungicides, herbicides, etc. They contain a wide range of chemicals such as chlorinated hydrocarbons (CHCs. E.g. DDT, Endosulfan etc.), organophosphates, metallic salts, carbonates, etc.
- Many of the pesticides are non-degradable, and their residues have a long life.
- Wastes from poultry farms, piggeries and slaughterhouses etc. reach the water though runoff.
- Not only is the agricultural sector the biggest consumer of global freshwater resources, with farming and livestock production using about 70 percent of the earth’s surface water supplies, but it’s also a serious water polluter.
- In rivers, Agricultural pollution is the top source of contamination and streams, the second-biggest source in wetlands, and the third main source in lakes. Nutrient pollution, caused by excess nitrogen and phosphorus in water or air, is the number-one threat to water quality worldwide and can cause algal blooms.

7. Thermal Pollution

- **Power plants**, thermal and nuclear, chemical and other industries use a lot of water for cooling purposes, and the used hot water is discharged into rivers, streams or oceans.
- **Discharge of hot water** may increase the temperature of the receiving water by 10 to 15 °C above the ambient water temperature. This is thermal pollution.
- Increase in water temperature decreases dissolved oxygen in the water.
- Unlike terrestrial organisms, aquatic organisms are adapted to a uniform steady...
temperature of the environment. A sudden rise in temperature kills fishes and other aquatic animals.

- One of the best methods of reducing thermal pollution is to store the hot water in **cooling ponds**, allow the water to cool before releasing into any receiving water body.

**8. Radiation Pollution**

- **Nuclear accidents** near water bodies or during natural calamities like tsunami and earthquakes pose the risk of radiation leakage (radiation exposure) into water bodies. E.g. Fukushima Daiichi nuclear disaster.
- Radiation exposure **causes mutations in the DNA of marine organisms**. If those mutations are not repaired, the cell may turn **cancerous**.
- Radioactive iodine tends to be absorbed by the thyroid gland and can cause thyroid cancer.

**9. Marine pollution**

- Oceans are the **ultimate sink of all natural and manmade pollutants**.
- The sewerage and garbage of coastal cities are also dumped into the sea.
- The other sources of oceanic pollution are **navigational discharge of oil, grease, detergents, sewage, garbage and radioactive wastes, offshore oil mining, oil spills**.

**10. Oil Spills**

- The most common cause of oil spill is **leakage during marine transport and leakage from underground storage tanks**.
- An oil spill could occur during **offshore oil production as well**.

**Impact of oil spill on marine life**

- Oil being lighter than water covers the water surface as a thin film cutting off oxygen to floating plants and other producers.
- Within hours of an oil spill, the fishes, shellfish, plankton die due to suffocation and metabolic disorders.
- Birds and sea mammals that consume dead fishes and plankton die due to poisoning.

**11. Invasive species**
Plants of water hyacinth are the world’s most problematic aquatic weed, also called ‘Terror of Bengal’. They grow abundantly in eutrophic water bodies and lead to an imbalance in the ecosystem. They cause havoc by their excessive growth leading to stagnation of polluted water.

12. Underground water pollution

- In India at many places, the groundwater is threatened with contamination due to seepage from industrial and municipal wastes and effluents, sewage channels and agricultural runoff.
- Pollutants like fluorides, uranium, heavy metals and nutrients like nitrates and phosphates are common in many parts of India.

Nitrates

- Excess nitrate in drinking water reacts with haemoglobin to form non-functional methaemoglobin and impairs oxygen transport. This condition is called methemoglobinemia or blue baby syndrome.
- High level of nitrates may form carcinogens and can accelerate eutrophication in surface waters.

Trace metals

- Include lead, mercury, cadmium, copper, chromium and nickel.
- These metals can be toxic and carcinogenic.

Arsenic

- Seepage of industrial and mine discharges, fly ash ponds of thermal power plants can lead to arsenic in groundwater.
- In India and Bangladesh (Ganges Delta), millions of people are exposed to groundwater contaminated with high levels of arsenic, a highly toxic and dangerous pollutant.
- Chronic exposure to arsenic causes black foot disease. It also causes diarrhoea and lung and skin cancer.

Fluoride

- Excess fluoride in drinking water causes neuromuscular disorders, gastrointestinal problems, teeth deformity, hardening of bones and stiff
painless joints (skeletal fluorosis).

- **Pain in bones and joint** and **outward bending of legs** from the knees is called **Knock-Knee syndrome**.
- **Fluorosis** is a common problem in several states of the country due to the intake of high fluoride content water.

---

**Q. Which of the following can be found as pollutants in the drinking water in some parts of India?**

1. Arsenic
2. Sorbitol
3. Fluoride
4. Formaldehyde
5. Uranium

Select the correct answer using the codes given below.

a. 1 and 3 only  
b. 2, 4 and 5 only  
c. 1, 3 and 5 only  
d. 1, 2, 3, 4 and 5

**Ans. c**

---

**Effects of Water Pollution**

**Effects of Water Pollution on Human Health**

- **Domestic and hospital sewage** contain many undesirable **pathogenic microorganisms**, and its disposal into water without proper treatment may cause an outbreak of serious diseases, such as **typhoid, cholera**, etc.
- Metals like lead, **zinc, arsenic, copper, mercury and cadmium** in industrial wastewaters adversely affect humans and other animals.
- Consumption of such **arsenic** polluted water leads to **accumulation** of arsenic in the body parts like blood, nails and hairs causing skin lesions, rough skin, dry and thickening of the skin and ultimately skin cancer.
- Mercury compounds in wastewater are converted by bacterial action into...
extremely toxic methyl mercury, which can cause numbness of limbs, lips and
tongue, deafness, blurring of vision and mental derangement

- Pollution of water bodies by mercury causes Minamata (neurological syndrome)
disease in humans.
- Lead causes lead poisoning (Lead interferes with a variety of body processes and is
toxic to many organs and tissues).
- The compounds of lead cause anaemia, headache, loss of muscle power and bluish
line around the gum.
- Water contaminated with cadmium can cause itai itai disease also called ouch-ouch
disease (a painful disease of bones and joints) and cancer of lungs and liver.

Effects of Water Pollution on the Environment

- Micro-organisms involved in biodegradation of organic matter in sewage waste
consume a lot of oxygen and make water oxygen deficient killing fish and other
aquatic creatures.
- Presence of large amounts of nutrients in water results in algal bloom (excessive
growth of planktonic algae. This leads to ageing of lakes.
- A few toxic substances, often present in industrial wastewaters, can undergo
biological magnification (Biomagnification) in the aquatic food chain. Eg., mercury
and DDT.
- High concentrations of DDT disturb calcium metabolism in birds, which causes
thinning of eggshell and their premature breaking, eventually causing a decline in
bird populations.

Effects of Water Pollution on Aquatic Ecosystem

- Polluted water reduces Dissolved Oxygen (DO) content, thereby, eliminates
sensitive organisms like plankton, molluses and fish etc.
- However, a few tolerant species like Tubifex (annelid worm) and some insect
larvae may survive in highly polluted water with low DO content. Such species are
recognized as indicator species for polluted water.
- Biocides, polychlorinated biphenyls (PCBs) and heavy metals directly eliminate
sensitive aquatic organisms.

Eutrophication

- The nutrient-enrichment of the lakes promotes the growth of algae, aquatic
plants and various fauna. This process is known as natural eutrophication.
Similar nutrient enrichment of lakes at an accelerated rate is caused by human activities and the consequent ageing phenomenon is known as cultural eutrophication.

On the basis of their nutrient content, lakes are categorized as Oligotrophic (very low nutrients), Mesotrophic (moderate nutrients) and Eutrophic (highly nutrient rich).

A vast majority of lakes in India are either eutrophic or mesotrophic because of the nutrients derived from their surroundings or organic wastes entering them.

Algal Bloom

Phytoplankton (algae and blue-green bacteria) thrive on the excess nutrients and their population explosion covers almost entire surface layer. This condition is known as algal bloom.

Phytoplankton are photosynthetic during day time adding oxygen to the aquatic ecosystem. But during nights, they consume far more oxygen as they respire aggressively.

i.e. Algal blooms accentuate the rate of oxygen depletion as the population of phytoplankton is very high.

The primary consumers like small fish are killed due to oxygen deprivation caused by algal blooms.

Death of primary consumers adversely affects the food chain.

Further, more oxygen is taken up by microorganisms during the decomposition process of dead algae, plants and fishes.

The new anaerobic conditions (absence of oxygen) created to promote the growth of bacteria such as Clostridium botulinum which produces toxins deadly to aquatic organisms, birds and mammals.

Water temperature has also been related to the occurrence of algal blooms, with unusually warm water being conducive to blooms.

Algal blooms can be any colours, but the most common ones are red or brown. These blooms are commonly referred to as red or brown tides.

Loss of coral reefs: Occurs due to decrease in water transparency (increased turbidity).

Harmful Algal Blooms

Most algal blooms are not harmful, but some produce toxins. These are known as Harmful
Algal Blooms (HABs). E.g. Shellfish poisoning. Significantly impact on local economies and the livelihood of coastal residents.

Dead zones (biological deserts)

- Dead zones are areas in the ocean with very low oxygen concentration (hypoxic conditions).

Eg., Gulf of Mexico every spring (farmers fertilize their crops and rain washes fertilizer off the land and into streams and rivers).

Gulf of Oman and it’s growing.

Mitigation of Eutrophication

- Treating Industrial effluents,
- Riparian buffer between a flowing body of water and land
- Increase in efficiency of nitrogen & phosphorous fertilisers
- Nitrogen testing & modeling- Using scientifically determined optimum level of fertilizer
- Encouraging organic farming.
- Reduction in nitrogen emission from vehicles and power plants.
- Marine Pollution

Marine pollution-

Refers to the emptying of chemicals into the ocean and its harmful effects.

World efforts:

Convention on the Dumping of Wastes at Sea/London Convention

- The Protocol states that “the polluter should, in principle, bear the cost of pollution”.
- The International Maritime Organization (IMO) is responsible for Secretariat

The United Nations Convention on Law of the Sea

- UNCLOS establishes general obligations for safeguarding the marine environment
and protecting freedom of scientific research on the high seas.

- It also creates an innovative legal regime for controlling mineral resource exploitation in deep seabed areas beyond national jurisdiction, through an International Seabed Authority.
- UNCLOS can hold states liable for damage caused by violation of their international obligations to combat pollution of the seas.

**Marpol Convention/ International Convention for the Prevention of Pollution from Ships**

- The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations.

**Case Studies of Indigenous technologies by Indians to purify water** which won Innovation Awards.

- Using **artificial intelligence and robotics**, Asim Bhalerao and Nidhi Jain have been instrumental in diverting 600 MLD (Million Liters a Day) of raw sewage from entering water bodies and prevented over 5,600 hours of manual scavenging.
- **Nikhilesh Das** from Assam came up with an indigenous way to use **human hair to clean oil spills** in water.
- Anjan Mukherjee, a former marine chief engineer, has developed the **Taraltec Disinfection Reactor**.
- Using **Floating Wetlands** to Make Water Bodies Pollutant-Free. **Tarun Sebastian Nanda**, an ecological engineer, is using a natural way to clean water bodies in Delhi through his ‘**Adopt an Island’** initiative.

**Water Pollution Control Measures**

I. Realising the importance of maintaining the cleanliness of the water bodies, the Government of India has passed the **Water (Prevention and Control of Pollution) Act, 1974** to safeguard our water resources.

II. An ambitious plan to save the river called the **Ganga Action Plan** was launched in 1985.

III. In India, the **Central Pollution Control Board (CPCB)**, an apex body in the field of water quality management, has developed a concept of “designated best use”.

Accordingly, the water body is designated as **A, B, C, D, E** on the basis of
The CPCB, in collaboration with the concerned State Pollution Control Boards, has classified all the water bodies including coastal waters in the country according to their “designated best uses”.

IV. Treatment of sewage water and the industrial effluents before releasing it into water bodies. **Hot water should be cooled** before release from the power plants.

V. Excessive use of fertilisers and pesticides should be avoided. **Organic farming and efficient use of animal residues** as fertilisers can replace chemical fertilizers.

VI. Water hyacinth (an aquatic weed, invasive species) can purify water by taking some toxic materials and a number of heavy metals from water.

VII. Oil spills in water can be cleaned with the help of **bregoli** — a by-product of paper industry resembling sawdust, oil zapper, microorganisms.

VIII. It has been suggested that we should plant **eucalyptus trees all along sewage ponds**. These trees absorb all surplus wastewater rapidly and release pure water vapour into the atmosphere.

IX. **Bioremediation**

X. Microorganisms can be specifically designed for bioremediation using **genetic engineering techniques**.

XI. TERI has developed a mixture of bacteria called ‘**Oilzapper and Oilivorous-S**’ which degrades the pollutants of **oil-contaminated sites**, leaving behind no harmful residues.

Recently, ‘oilzapper’ was in the news. What is it?

a. It is an eco-friendly technology for the remediation of oil sludge and oil spills.
b. It is the latest technology developed for under-sea oil exploration.
c. It is a genetically engineered high biofuel yielding maize variety.
d. It is the latest technology to control the accidentally caused flames from oil wells.

Ans: a
XII. Coagulation / Flocculation - Aluminium sulphate (alum) is the most common coagulant used for water purification.

XIII. Chlorine is used because it is a very effective disinfectant, and residual concentrations can be maintained to guard against possible biological contamination.

XIV. Fluoridation - Water fluoridation is the treatment of community water supplies for the purpose of adjusting the concentration of the free fluoride ion to the optimum level sufficient to reduce dental caries.

XV. pH Correction - Lime is added to the filtered water to adjust the pH and stabilise the naturally soft water in order to minimise corrosion.

XVI. National Environmental Engineering Research Institute (NEERI) is at Nagpur.

XVII. EcoSan toilets - Ecological sanitation is a sustainable system for handling human excreta, using dry composting toilets.

XVIII. Bio-Toilets - Designed by Railways along with DRDO.

Source: Aspire IAS Notes

Afghanistan crisis

GS-II | 22 June, 2021

Afghanistan crisis

Part of: GS Prelims and GS-II- IR

Taliban and Afghan forces clashed at Kunduz

- The Taliban and Afghan forces clashed on the outskirts of the strategic northern city of Kunduz, with the insurgents claiming to have captured three districts in the region in a week.
- The Taliban have launched major offensives targeting government forces since early May when the U.S. military began its final troop withdrawal, and claim to have seized more than 50 of the country’s 421 districts.
- Taliban claimed they had captured the Imam Sahib district of the province, the third to be taken in a week.
- The Taliban have repeatedly attempted to capture the city, located not far from Tajikistan border. The insurgents briefly held Kunduz twice before — in
Historical Background of Afghanistan crisis

The Saur Revolution had taken place in Afghanistan in 1978 which installed a communist party in power. Nur Muhammad Taraki became the head of the state replacing the previous president Daoud Khan. Taraki’s government introduced many modernisation reforms that were considered too radical and left them unpopular, especially in the rural areas and with the traditional power structures. The communist government also had a policy of brutally suppressing all opposition. Even unarmed civilians opposing the government were not spared. This led to the rise of various anti-government armed groups in the country. The government itself was divided and Taraki was killed by a rival, Hafizullah Amin, who became the president. The Soviet Union, which at that time, wanted a communist ally in the country, decided to intervene.

Soviet army was deployed on 24th December 1979 in Kabul. They staged a coup and killed Amin, installing Babrak Karmal as the president. Karmal was a Soviet ally. This intervention was seen as an invasion by the USA and other western nations. While the Soviet army had control of the cities and towns, the insurgency groups called the Mujahideen had the rural parts of Afghanistan under their control. A bitter war was fought between both groups. The Soviet Union, which had planned to stay for 6 months to a year in Afghanistan found themselves stuck in a war that was proving to be too costly.

The Mujahideen did not relent in their pursuit to ‘drive out’ the Soviets. They had the support of many countries like the USA, Pakistan, China, Iran, Egypt and Saudi Arabia. They were given assistance like arms and training needed to fight the soviets. The soviets followed a policy of wiping out the rural regions in order to defeat the Mujahideen. Millions of land mines were planted and important irrigation systems were destroyed. As a result, millions of Afghan refugees took refuge in Pakistan and Iran. Some came to India as well. It is estimated that in the Soviet-Afghan war, about 20 lakh Afghan civilians were killed.

In 1987, after the reformist Mikhail Gorbachev came to power in the Soviet Union, he announced that his government would start withdrawing troops. The final soviet troops were withdrawn on 15 February 1989. Now, the government of Afghanistan was left alone to fight the Mujahideen. Finally, they succeeded in taking control of Kabul in 1992. Again, the Mujahideen had different
factions within and they could not agree on power sharing. The country collapsed into a bloody civil war.

The Taliban

In 1994, a group of fundamentalist students, wrought control of the city of Kandahar and started a campaign to seize power in the country. They were called the Taliban. Many of them were trained in Pakistan when they were in refugee camps. By 1998, almost entire Afghanistan was under the control of the Taliban. Many of the Mujahideen warlords fled to the north of the country and joined the Northern Alliance who were fighting the Taliban. This time, Russia lent support to the Northern Alliance, though they were fighting against them earlier. The Taliban ruled the country under strict interpretation of the Sharia law and many of the progress with regard to women and education which the country had seen earlier, were reversed. Girls were forbidden from attending schools and women banned from working. The Taliban-ruled country also became a safe haven for international terrorists. Only Pakistan, the UAE and Saudi Arabia recognised the Taliban government.

In 2001, a US-led coalition defeated the Taliban and established another government in place. However, Afghanistan still sees resistance from the Taliban in certain pockets.

US fighting a war in Afghanistan and why has it lasted so long?

1. On 11 September 2001, attacks in America killed nearly 3,000 people. Osama Bin Laden, the head of Islamist terror group al-Qaeda, was quickly identified as the man responsible.
2. The Taliban, radical Islamists who ran Afghanistan and protected Bin Laden, refused to hand him over. So, a month after 9/11, the US launched air strikes against Afghanistan.
3. As other countries joined the war (ISAF), the Taliban were quickly removed from power. But they didn't just disappear - their influence grew back and they dug in.
4. Since then, the US and its allies have struggled to stop Afghanistan's government collapsing and to end deadly attacks by the Taliban.
5. The mission, he said, was "to disrupt the use of Afghanistan as a terrorist base of operations and to attack the military capability of the Taliban regime".
6. The first targets were military sites belonging to the hardline Taliban group who ruled the country. Training camps for al-Qaeda, the terror group run by
9/11 plotter Osama Bin Laden were also hit.

7. But 18 years on, it's hard to argue the US mission has been fulfilled - the Taliban may play a part in ruling Afghanistan again if peace talks do eventually succeed.

The Taliban first took control of the capital Kabul in 1996, and ruled most of the country within two years. They followed a radical form of Islam and enforced punishments like public executions. Within two months of the US and its international and Afghan allies launching their attacks, the Taliban regime collapsed and its fighters melted away into Pakistan.

A new US-backed government took over in 2004, but the Taliban still had a lot of support in areas around the Pakistani border, and made hundreds of millions of dollars a year from the drug trade, mining and taxes. As the Taliban carried out more and more suicide attacks, international forces working with Afghan troops struggled to counter the threat the re-energised group posed.

In 2014, at the end of what was the bloodiest year in Afghanistan since 2001, Nato's international forces - wary of staying in Afghanistan indefinitely - ended their combat mission, leaving it to the Afghan army to fight the Taliban. But that gave the Taliban momentum, as they seized territory and detonated bombs against government and civilian targets. In 2018, Taliban was openly active across 70% of Afghanistan.

Where did the Taliban come from?

- Afghanistan had been in a state of almost constant war for 20 years even before the US invaded.
- In 1979, a year after a coup, the Soviet army invaded Afghanistan to support its communist government. It fought a resistance movement - known as the mujahideen - that was supported by the US, Pakistan, China and Saudi Arabia, among other countries.
- In 1989, Soviet troops withdrew but the civil war continued. In the chaos that followed, the Taliban (which means "students" in the Pashto language) sprang up.
- They first rose to prominence in the border area of northern Pakistan and south-west Afghanistan in 1994. They promised to fight corruption and improve security and, at that time, many Afghans were tired of the excesses and infighting of the mujahideen during the civil war.
- It's thought the Taliban first appeared in religious schools, mostly funded by
Saudi Arabia, which preached a hardline form of Islam.
- They enforced their own austere version of Sharia, or Islamic law, and introduced brutal punishments. Men were made to grow beards and women had to wear the all-covering burka.
- The Taliban banned television, music and cinema and disapproved of girls' education.
- And because the Taliban gave shelter to militants from the al-Qaeda group, it made them an immediate target for an attack by US, Afghan and international forces in the wake of 9/11.

Why has the war lasted so long?

- There are many reasons for this. But they include a combination of fierce Taliban resistance, the limitations of Afghan forces and governance, and other countries' reluctance to keep their troops for longer in Afghanistan.
- At times over the past 18 years, the Taliban have been on the back foot. In late 2009, US President Barack Obama announced a troop "surge" that saw the number of American soldiers in Afghanistan top 100,000.
- The surge helped drive the Taliban out of parts of southern Afghanistan, but it was never destined to last for years.
- As a result, the Taliban were able to regroup. When international forces withdrew from fighting, Afghan forces left to lead the charge were easily overwhelmed. To make matters worse, Afghanistan's government, that is full of tribal division, is often hamstrung.

5 Main reasons why war is still going on:

- a lack of political clarity since the invasion began, and questions about the effectiveness of the US strategy over the past 18 years:
- the fact each side is trying to break what has become a stalemate - and that the Taliban have been trying maximise their leverage during peace negotiations
- an increase in violence by Islamic State militants in Afghanistan - they've been behind some of the bloodiest attacks recently
- There's also the role played by Afghanistan's neighbour, Pakistan.
- There's no question the Taliban have their roots in Pakistan, and that they were able to regroup there during the US invasion. But Pakistan has denied helping or protecting them - even as the US demanded it do more to fight militants.

How have the Taliban managed to stay so strong?
The group could be making as much as $1.5bn (£1.2bn) a year, a huge increase even within the past decade. Some of this is through drugs - Afghanistan is the world's largest opium producer, and most opium poppies - used for heroin - are grown in Taliban-held areas.

But the Taliban also make money by taxing people who travel through their territory, and through businesses like telecommunications, electricity and minerals.

Foreign countries, including Pakistan and Iran, have denied funding them, but private citizens from the region are thought to have done so.

The figures for Afghan civilians are more difficult to quantify. A UN report in February 2019 said more than 32,000 civilians had died. The Watson Institute at Brown University says 42,000 opposition fighters have died. The same institute says conflicts in Iraq, Syria, Afghanistan and Pakistan have cost the US $5.9 trillion since 2001. The US is still conducting air strikes against the Taliban, instigated by the third president to oversee the war, Donald Trump. But he is keen to reduce troop numbers before he faces another election in November 2020. The Taliban now control much more territory than they did when international troops left Afghanistan in 2014. Many in Washington and elsewhere fear that a full US troop pull-out would leave a vacuum that could be filled by militant groups seeking to plot attacks in the West. The Afghan people, meanwhile, continue to bear the brunt of the long and bloody conflict.

What do the Taliban and the United States want?

The negotiations appear to be focused on four elements:

- **Withdrawal of Foreign Forces** Both sides agree on the full withdrawal of the fourteen thousand U.S. troops currently in Afghanistan, as well as of additional foreign forces, but they disagree on the timeline. The United States is reportedly offering a two-and-a-half-year deadline, while the Taliban insists on nine months.

- **Counterterrorism Assurances** The Taliban has agreed to prevent Afghanistan from being used by terrorist groups, but negotiators disagree over how to define the terms “terrorism” and “terrorist.”

- **Intra-Afghan Dialogue** Washington has urged Afghan government and Taliban leaders to begin official talks on how Afghanistan will be governed
after the war, but the Taliban refuses to negotiate with the government until after it has reached a deal with the United States.

- **Comprehensive Cease-fire:** U.S. negotiators seek a permanent cease-fire among U.S., Taliban, and Afghan government forces prior to a peace deal, but the Taliban insists on putting off a cease-fire until U.S. troops have withdrawn.

**Reasons for India to be part of reconciliation process with the Taliban:**

- **Regional Stability:** Security and Stability are foundations over which development can be built on. Peaceful neighbourhood and trouble free regional climate will provide space for the regimes to focus more on development as threats of violence by Taliban's in the region will be minimized.

- **Counter China and Pakistan's vested interest:** India should play a considerable role through Quadrilateral group plus 2 talks to thwart the efforts of China to place puppet regimes which can play according to their own vested interests. This can be counterproductive for India’s aspirations and concerns.

- **Connectivity with Central Asia:** India’s trade with Central Asia and reaping benefits from the enhanced connectivity will be largely dependent on Afghanistan’s domestic environment. A peaceful and cooperative Afghanistan will be a key pin in India’s central Asia policy. The latest trilateral transit agreement between India, Iran and Afghanistan is a significant step in this direction.

- **TAPI for Energy security:** Violence free Afghanistan is desideratum for finishing the project of TAPI and sustaining the benefits from it through energy supplies from Turkmenistan.

- **Gateway to "Link west" policy:** Afghanistan will act as a gateway to India’s increasing rigour on its west Asia policy.

- **Minerals of Afghanistan:** The cost of access to minerals will be minimum and helpful in expanding the production of Indian Industries.

**US- Taliban Deal**

Recently, the U.S. **signed a deal (at Qatar’s capital-Doha) with the Taliban** that could paved the way towards a **full withdrawal of foreign soldiers** from Afghanistan over the next 14 months and **represent a step towards ending the 18-year-war in Afghanistan.** Along with this, a **separate joint declaration was**
The peace deal is expected to kick-off two processes - a phased withdrawal of US troops and an ‘intra-Afghan’ dialogue. The deal is a fundamental step to deliver a comprehensive and permanent ceasefire and the future political roadmap for Afghanistan peace process and the Central region.

Background of the Deal

- **On 11 September 2001**, terrorist attacks in America killed nearly 3,000 people. **Osama Bin Laden**, the head of Islamist terror group al-Qaeda, was quickly identified as the man responsible.
- **The Taliban**, radical Islamists who ran Afghanistan at that time, protected Bin Laden, refused to hand him over. So, a month after 9/11, the US launched airstrikes against Afghanistan.
- The US was joined by an **international coalition** and the Taliban were quickly removed from power. However, they turned into an insurgent force and continued deadly attacks, destabilising subsequent Afghan governments.
- **Since then, the US is fighting a war against the Taliban**.
- **Donald Trump’s 2017 policy on Afghanistan**, was based on breaking the military stalemate in Afghanistan by authorising an additional 5,000 soldiers, giving US forces a freer hand to go after the Taliban, putting Pakistan on notice and strengthening Afghan capabilities.
- However, the US realised that the Taliban insurgency could not be defeated as long as it enjoyed safe havens and secure sanctuaries in Pakistan, the US changed track and sought Pakistan’s help to get the Taliban to the negotiating table.
- **The negotiations began in September 2018** with the appointment of Ambassador Zalmay Khalilzad to initiate direct talks with the Taliban. After nine rounds of US-Taliban talks in Qatar, the two sides seemed close to an agreement.

Salient Features of the Deal

- **Troops Withdrawal**: The US will draw down to **8,600 troops in 135 days** and the NATO or coalition troop numbers will also be brought down, proportionately and simultaneously. And all troops will be out within 14 months.
- **Taliban Commitment**: The main counter-terrorism commitment by the Taliban is that Taliban will not allow any of its members, other individuals or
groups, including al-Qaeda, to use the soil of Afghanistan to threaten the **security of the United States and its allies.**

- **Sanctions Removal:** UN sanctions on Taliban leaders to be removed by three months and US sanctions by August 27. The sanctions will be out before much progress is expected in the intra-Afghan dialogue.

- **Prisoner Release:** The US-Taliban pact says up to 5,000 imprisoned Taliban and up to 1,000 prisoners from “the other side” held by Taliban “will be released” by March 10.

### Challenges in the Deal

- **One-Sided Deal:** The fundamental issue with the U.S.’s Taliban engagement is that it deliberately excluded the **Afghan government** because the Taliban do not see the government as legitimate rulers. Also, there is no reference to the Constitution, rule of law, democracy and elections in the deal.
  - Taliban is known for strict religious laws, banishing women from public life, shutting down schools and unleashing systemic discrimination on religious and ethnic minorities, has not made any promises on whether it would respect civil liberties or accept the Afghan Constitution.
  - Therefore, **Shariat-based system** (political system based on fundamental Islamic values) with the existing constitution is not easy.

- **Issues with Intra-Afghan Dialogue:**
  - President Ashraf Ghani faces a political crisis following claims of fraud in his recent re-election.
  - The political tussle is between Ashraf Ghani (who belongs to the largest ethnic group in Afghanistan- the Pashtun) and Abdullah Abdullah (whose base is among his fellow Tajiks, the second largest group in Afghanistan).
  - If there are any concessions made by Mr Ghani’s government to the Taliban (predominantly Pashtun) will likely be interpreted by Mr Abdullah’s supporters as an intra-Pashtun deal reached at the cost of other ethnic groups, especially the Taiiks and the Uzbeks.
  - Consequently, these ethnic fissures may descend into open conflict and can start the next round of civil war.

- Thus, the lifting of the US military footprint and the return of a unilateral Taliban could set the stage for the next round of civil war that has hobbled the nation since the late 1970s.

- **Problem with Prisoner’s Swap:** The US-Taliban agreement and the joint
The US-Taliban pact says up to 5,000 imprisoned Taliban and up to 1,000 prisoners from “the other side” held by Taliban “will be released” by March 10.

However, the joint declaration lays down no numbers or deadlines for the prisoner's swap. Afghanistan President held that there is no commitment to releasing 5,000 prisoners. He also held that such prisoners' swap is not in the authority of the US, but in the authority of the Afghan government.

Also, the Taliban is fragmented or divided internally. It is composed of various regional and tribal groups actina semi-autonomously.

Therefore, it is possible that some of them may continue to engage in assaults on government troops and even American forces during the withdrawal process.

It is unclear if there is a date for the complete withdrawal of US troops or for concluding the intra-Afghan dialogue, or how long the truce will hold.

Impact of the Deal on Other Stakeholders

- **US:** The promise to end America’s “endless wars” in the greater Middle East region was one of the central themes of US President Donald Trump’s election campaign in 2016. This deal may demonstrate progress on that front in his bid for re-election later this year.

  Though, the US doesn’t recognise Taliban as a state under the name of Islamic Emirate of Afghanistan (key demand of Taliban), though many experts are of the view that this deal is a little more than a dressed-up U.S. surrender that will ultimately see the Taliban return to power.

- **Pakistan:** The deal provides the strategic advantage to Pakistan, who is a long-time benefactor of the Taliban.

- **China:** After the launch of the China-Pakistan Economic Corridor (CPEC), Pakistan is seen as more of a protectorate state of China. Thus, China may leverage Pakistan's influence on the Taliban, to propel its strategic projects like the Belt and Road Initiative.

Impact of this Deal on India

This deal alters the balance of power in favour of the Taliban, which will have strategic, security and political implications for India. The deal may jeopardise the key stakes of India in Afghanistan:
India has a major stake in the stability of Afghanistan. India has invested considerable resources in Afghanistan’s development. India has a major stake in the continuation of the current Afghanistan government in power, which it considers a strategic asset vis-à-vis Pakistan.

- An increased political and military role for the Taliban and the expansion of its territorial control should be of great concern to India since the Taliban is widely believed to be a protégé of Islamabad.
- As Afghanistan is the gateway to Central Asia, the deal might dampen India’s interest in Central Asia.
- Withdrawal of US troops could result in the breeding of the fertile ground for various anti-India terrorist outfits like Lashkar-e-Taiba or Jaish-e-Mohammed.

Way Forward

An independent, sovereign, democratic, pluralistic and inclusive Afghanistan is crucial for peace and stability in the region. In order to ensure this:

- The Afghan peace process should be Afghan-led, Afghan-owned and Afghan-controlled.
- Also, there is a need for the global community to fight against the global concern of terrorism. In this context, it high time to adopt the Comprehensive Convention on International Terrorism (proposed by India at UN in 1996).

Though the deal is a good step, the road ahead would not be easy. Achieving lasting peace in Afghanistan will require patience and compromise among all parties.

India - Afghanistan: Heart of Asia Conference

- Calling for a “double peace” both inside Afghanistan and in the region, External Affairs Minister S. Jaishankar said India supports the Intra-Afghan Negotiations (IAN), in a rare direct reference to the Taliban at the 9th Heart of Asia conference in Tajikistan.
- Mr. Jaishankar attended the meet along with Foreign Ministers of 15 countries, including Afghanistan, Pakistan, Turkey, Iran, China, Russia, Saudi Arabia and Central Asian states.
- “India has been supportive of all the efforts being made to accelerate the dialogue between the Afghan government and the Taliban, including intra-Afghan negotiations,” the Minister said and referred to his participation in the
‘Engage in good faith’

• “If the peace process is to be successful, then it is necessary to ensure that the negotiating parties continue to engage in good faith, with a serious commitment towards reaching a political solution,” he added. India has not in the past referred directly to the Taliban, and the government has not opened any public engagement with the militant group.
• Mr. Jaishankar said India views the escalation in violence against civilians in and the “continued involvement of foreign fighters” in Afghanistan with “grave concern” and pushed for Heart of Asia members to ensure a permanent ceasefire.
• Speaking at the same conference, Pakistan’s Foreign Minister Shah Mehmood Qureshi said Pakistan “fears that any space gained by ISIS and Al-Qaeda could accentuate the threat of terrorism,” and cautioned against the role of “spoilers”, both “within and outside Afghanistan”.
• In a departure from the recent past, however, Mr. Jaishankar and Mr. Qureshi were present for each other’s speeches during the conference, unlike previous boycotts by the two sides at a number of conferences since 2019.
• However, despite speculation over an ongoing India-Pakistan peace process and a back-channel dialogue, Mr. Jaishankar and Mr. Qureshi did not make any public contact during the day-long conference, and were seen avoiding eye contact during the joint photo opportunity they both participated in.
• Speaking at the conference in Dushanbe, Afghanistan President Ashraf Ghani, who spoke to both foreign ministers in separate meetings, thanked neighbouring countries for their support.
• He also lauded a number of regional connectivity initiatives including India’s air corridor programme and Chabahar port project, as well as the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline.

Russia calls for an inclusive solution for Afghanistan peace talks

• A solution to the Afghan civil war should balance the ethnic and religious groups of Afghanistan and no group should be left out of the final settlement, said Russian Foreign Minister Sergey Lavrov here on Tuesday after holding bilateral discussions with his Indian counterpart Dr. S. Jaishankar.
• Mr. Lavrov said India and Russia were working for stability and connectivity in the region, and urged that “military alliances” should not come up in Asia.

‘Part of Afghan society’
“The Taliban movement is a part of Afghan society. Decision on the settlement in Afghanistan should foresee the participation of all political, ethnic and religious groups in the country. Otherwise, the solution will not be stable. This decision has to be based on balance of ethnic, political and religious interests, including in the legislative bodies,” Mr. Lavrov said.

“Any exclusion of any group from this process will not lead to an implementable and sustainable agreement which can lead to resumption of hostilities, which is not the desire of the stakeholders,” he said in response to a question after both the Ministers issued press statements.

Dr. Jaishankar said there is a need to “harmonise” the interests of various stakeholders that are active in and around Afghanistan.

“For India, what happens in Afghanistan impacts our security directly. I shared our approach that for a durable peace there would require harmonising the interest of all — both within and around that country,” Mr. Jaishankar said. “The peace process should be based on foundational principles to which we all subscribe and a political solution should mean independent, sovereign, united and democratic Afghanistan,” he added.

Missile defence system

Apart from the Afghan situation, the major issue on the agenda for Tuesday’s talks was expected to be the delivery of the Russian S400 missile defence system and the threat of U.S. sanctions that the delivery could attract.

However, the Ministers said the “specific” issue did not come up during the discussion.

However, Mr. Lavrov acknowledged that the U.S. exerts pressure on any country that wants to sign military and industrial contracts with Russia.

Source: TH
Government had notified the Consumer Protection (E-Commerce) Rules, 2020 with effect from 23 July 2020

Major provisions

- To regulate all commercial transactions sold over a digital or electronic network.
- It recognises two e-commerce business models, namely, marketplace model and inventory-based model. Separate rules specified for provisions for marketplace and inventory-based entities.
- All information on the return, refund, exchange, warranty and guarantee, delivery and shipment of the goods or services being sold, including their country of origin, be provided on the platform. These would enable consumers to make an informed decision.
- Clear-cut definition of what constitutes ‘unfair’ trade practice: The government should offer a more clear-cut definition of what constitutes ‘unfair’ trade practice as well as spell out a practical legal remedy to tackle the issue.
- Predatory pricing by e-commerce firms: Risk that predatory pricing by e-commerce firms may result in competition being wiped out and prove detrimental to consumers in the long run.
- Fixing a cap on delivery charges: It has also recommended fixing a cap on delivery charges levied by e-commerce firms, as well as providing for penal provisions for violation of rules related to misinformation.
- Unfair trade practices: While e-commerce enterprises offer many benefits, the development of the segment has rendered consumers vulnerable to new forms of unfair trade practices, violation of privacy and issues of unattended grievances.
- Issue of drip pricing: It should also clearly define ‘drip pricing ‘wherein the final cost of the product goes up due to additional charges, and provide for protecting consumers against this by including penal provisions for violation.

Issues in the Rules

However, since the notification of these rules, the Government has received several representations from aggrieved consumers, traders and associations complaining against widespread cheating and unfair trade practices being observed in the e-commerce ecosystem.

- It was observed that there was an evident lack of regulatory oversight in e-
commerce which required some urgent action.

- Moreover, the rapid growth of e-commerce platforms has also brought into the purview the unfair trade practices of the marketplace e-commerce entities engaging in manipulating search result to promote certain sellers, preferential treatment to some sellers, indirectly operating the sellers on their platform, impinging the free choice of consumers, selling goods close to expiration etc.
- Additionally, conventional flash sales by third party sellers are not banned on e-commerce platform.
- But, certain e-commerce entities are engaging in limiting consumer choice by indulging in “back to back” or “flash” sales wherein one seller selling on platform does not carry any inventory or order fulfilment capability but merely places a “flash or back to back” order with another seller controlled by platform.
- This prevents a level playing field and ultimately limits customer choice and increases prices.

Proposed amendments to the Rules

To protect the interests of consumers, prevent their exploitation and encourage free and fair competition in the market, the Government of India is sharing a draft of the proposed amendments to the Consumer Protection (E-commerce) Rules, 2020.

The proposed amendments aim to bring transparency in the e-commerce platforms and further strengthen the regulatory regime to curb the prevalent unfair trade practices. The proposed amendments are as follows

- To ensure compliance of the Consumer Protection Act, 2019 and Rules, appointment of Chief Compliance Officer, a nodal contact person for 24x7 coordination with law enforcement agencies, officers to ensure compliance to their orders and Resident Grievance Officer for redressing of the grievances of the consumers on the e-commerce platform, has been proposed.
- This would ensure effective compliance with the provisions of the Act and Rules and also strengthen the grievance redressal mechanism on e-commerce entities.
- Putting in place a framework for registration of every e-commerce entity with the Department for Promotion of Industry and Internal Trade (DPIIT) for allotment of registration number which shall be displayed
prominently on website as well as invoice of every order placed the e-commerce entity.

- **Registration of e-commerce entities would help create a database** of genuine e-commerce entities and ensure that the consumers are able to verify the genuineness of an e-commerce entity before transacting through their platform.
- To protect the interests of consumers, **mis-selling has been prohibited** i.e. selling goods and services entities selling goods or services by deliberate misrepresentation of information by such entities about such goods or services.
- To ensure that consumers are **aware about the expiry date** of the products they are buying on the e-commerce platform all sellers on marketplace e-commerce entities and all inventory e-commerce entities to provide best before or use before date to enable consumers to make an informed purchase decision.
- To ensure that the **domestic manufacturers and suppliers get a fair and equal treatment** on the e-commerce platform it has been provided that where an e-commerce entity offers imported goods or services, it shall incorporate a filter mechanism to identify goods based on country of origin and suggest alternatives to ensure fair opportunity to domestic goods.
- To ensure that consumers are not adversely affected in the event where a seller fails to deliver the goods or services due to negligent conduct by such seller in fulfilling the duties and liabilities in the manner as prescribed by the marketplace e-commerce entity, provisions of Fall-back liability for every marketplace e-commerce entity have been provided.

Source: PIB
World’s first GM Rubber plant in Assam

- A Rubber Board research farm on the outskirts of Guwahati now sports the world’s first genetically modified (GM) rubber plant tailored for the climatic conditions in the Northeast.
- The GM rubber has additional copies of the gene MnSOD, or manganese-containing superoxide dismutase, inserted in the plant, which is expected to tide over the severe cold conditions during winter — a major factor affecting the growth of young rubber plants in the region.
- The plant was developed at the Kerala-based Rubber Research Institute of India (RRII).
- RRII had earlier developed two high-yielding hybrid clones of rubber adapted to the climatic conditions of the Northeast.
- This is the first time any GM crop has been developed exclusively for this region after years of painstaking research in RRII’s biotechnology laboratory.
- Natural rubber is a native of warm humid Amazon forests and is not naturally suited for the colder conditions in the Northeast, which is one of the largest producers of rubber in India.

What is Genetic Engineering?

- Through genetic engineering, scientists are able to move desirable genes from one plant or animal to another or from a plant to an animal or vice versa.
- In essence, genetic engineering is a technology wherein a specific gene can be selected and implanted into the recipient organism.
- The process of genetic engineering involves splicing an area of a chromosome, a gene, that controls a certain characteristic of the body. For example:
  - A gene may be reprogrammed to produce an antiviral protein.
  - A gene can be removed and can be placed into a bacterial cell where it can be sealed into the DNA chain using ligase.

Genetically Modified Seeds:

- Conventional plant breeding involves crossing species of the same genus to provide the offspring with the desired traits of both parents.
- Genus is a class of items such as a group of animals or plants with similar
traits, qualities or features.

- Genetic modification aims to transcend the genus barrier by introducing an alien gene in the seeds to get the desired effects. The alien gene could be from a plant, an animal or even a soil bacterium.
- Bt cotton is the only Genetically Modified (GM) crop that is allowed in India. It has alien genes from the soil bacterium Bacillus thuringiensis (Bt) that allows the crop to develop a protein toxic to the common pest pink bollworm.
- Herbicide Tolerant Bt (Ht Bt) cotton, on the other hand is derived with the insertion of an additional gene, from another soil bacterium, which allows the plant to resist the common herbicide glyphosate.
- In Bt brinjal, a gene allows the plant to resist attacks of fruit and shoot borers.
- In DMH-11 mustard, genetic modification allows cross-pollination in a crop that self-pollinates in nature.

### Legal Position of GM crops in India

- In India, the Genetic Engineering Appraisal Committee (GEAC) is the apex body that allows for commercial release of GM crops.
- In 2002, the GEAC had allowed the commercial release of Bt cotton. More than 95% of the country’s cotton area has since then come under Bt cotton.
- Use of the unapproved GM variant can attract a jail term of 5 years and fine of Rs. 1 lakh under the Environment Protection Act, 1986.

### Genetic Engineering Appraisal Committee

- The Genetic Engineering Appraisal Committee (GEAC) functions under the Ministry of Environment, Forest and Climate Change (MoEF&CC).
- It is responsible for the appraisal of activities involving large-scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
- The committee is also responsible for the appraisal of proposals relating to the release of genetically engineered (GE) organisms and products into the environment including experimental field trials.
- GEAC is chaired by the Special Secretary/Additional Secretary of MoEF&CC and co-chaired by a representative from the Department of Biotechnology (DBT).

### Advantages of Genetic Engineering
Genetically Modified (GM) Crops: Genetic engineering made it possible to create crop varieties regarded as “more beneficial” terms of coming up with crops with the desired traits.

Examples - Bt Cotton

Treatment of Genetic Disorders and Other Diseases: Through genetic engineering, genetic disorders may also be fixed by replacing the faulty gene with a functional gene.

Disease-carrying insects, such as mosquitoes, may be engineered into becoming sterile insects.

This will help in curbing the spread of certain diseases, e.g. malaria and dengue fever.

Therapeutic Cloning: It is a process whereby embryonic cells are cloned to obtain biological organs for transplantation.

Challenges of Genetic Engineering:

Irreversible Changes: Some scientists believe that introducing genetically-modified genes may have an irreversible effect with consequences yet unknown.

GMO that can cause harmful genetic effects, and genes moving from one species to another that is not genetically engineered.

It has been shown that GMO crop plants can pass the beneficial gene along to a wild population which may affect the biodiversity in the region. An example is the sunflowers genetically-engineered to fend off certain insects.

Health Issues Related with GMO Crops: There are concerns over the inadvertent effects, such as the creation of food that can cause an allergic reaction.

Bioethics: Genetic engineering borderlines on many moral and ethical issues. One of the major questions raised is if humans have the right to manipulate the laws and course of nature.

Dangers Associated With Genetic Engineering:

Rapid Growth of Technology: Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) gene editing, developed only a few years ago, deploys the same natural mechanism that bacteria use to trim pieces of genetic information from one genome and insert it into another.

This mechanism, which bacteria developed over millennia to defend themselves from viruses, has been turned into a cheap, simple, quick way to edit the DNA of any organism in the lab.

CRISPR isn’t the only genetic technology we need to worry about. A broader
Democratisation of Biotechnology: As CRISPR is cheap and easy to use, thousands of scientists all over the world are experimenting with CRISPR-based gene editing projects with very little of this research being limited by regulations.

The technologies have democratised to such a degree that any country can engineer viruses.

Further, the danger comes not only from governments: Non-state actors, rogue scientists and bio-hackers have access to the same tools.

Also, researchers have demonstrated that they can recreate deadly viruses such as that of smallpox, which took humanity decades to eradicate.

Solutions:

- Leveraging Artificial Intelligence & Big Data. With Artificial Intelligence (AI) and genomic data, scientists will decipher the complex relationships between DNA and biological processes and find treatments for diseases.
- 3-D printing can help develop at home medicines, tissues, and bacteria custom-designed to suit our DNA and keep us healthy.
- Gathering of Genomic Data: There is a need to develop genomic blueprints of human and other species, this information can help immensely to defend and develop vaccines against pandemics like Covid-19.

About Bt Cotton

- Bt cotton is the only transgenic crop that has been approved by the Centre for commercial cultivation in India.
- It has been genetically modified to produce an insecticide to combat the cotton bollworm, a common pest.
- The HTBt cotton variant adds another layer of modification, making the plant resistant to the herbicide glyphosate, but has not been approved by regulators.
- Fears include glyphosate having a carcinogenic effect, as well as the unchecked spread of herbicide resistance to nearby plants through pollination, creating a variety of superweeds.

Source: TH
Malnutrition and COVID-19

What is the news?

- A parliamentary panel asked the Ministry of Women and Child Development to conduct a survey on the impact of the pandemic on anganwadi services and malnutrition levels among children.
- The Parliamentary Standing Committee on Education, Women, Children, Youth and Sports chaired by Rajya Sabha MP Vinay Sahasrabuddhe is learnt to have grilled the officials of the Ministry on the need for data to understand “how anganwadi services were delivered on the ground during the pandemic, and to assess the impact of COVID-19 on stunting and wasting levels.
- While the government has launched an app called Poshan Tracker to monitor delivery of services at 14 lakh anganwadis, the officials told the panel that the data is beginning to be uploaded only from June 1.
- Though the government has announced a corpus of ₹10 lakh from PM CARES for such children, “there has been no spending from PM CARES yet, and the responses from the Ministry were very ambiguous” the member said.

COVID-19 and Malnutrition

- The pandemic has worsened the problem of Malnutrition.
- While malnutrition already remains as the predominant risk factor for child deaths and total disability-adjusted life years (DALY), the COVID-19 has pushed back our efforts on ending malnutrition, which plagues India's children.
- There is a real risk that, as nations strive to control the virus, the gains made in reducing hunger and malnutrition will be lost. The need for more equitable, resilient and sustainable food and health systems has never been more urgent.

What is Malnutrition?

Malnutrition refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients. The term malnutrition addresses 3 broad groups of conditions:
1. Undernutrition, which includes wasting (low weight-for-height), stunting (low height-for-age) and underweight (low weight-for-age).
2. Micronutrient-related malnutrition, which includes micronutrient deficiencies (a lack of important vitamins and minerals) or micronutrient excess;
3. Overweight, obesity and diet-related non-communicable diseases (such as heart disease, stroke, diabetes and some cancers).

Globally, at least 1 in 3 children under 5 is undernourished or overweight and at least 1 in 2 children suffer from hidden hunger.

### Malnutrition and Undernutrition

- Malnutrition refers to deficiencies, excesses or imbalances in a person’s intake of energy and/or nutrients.
- The term malnutrition covers two broad groups of conditions:
  - Undernutrition—which includes stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies (a lack of important vitamins and minerals).
  - Obesity— which includes overweight and diet-related noncommunicable diseases (such as heart disease, stroke, diabetes, and cancer).

- Hidden hunger is a lack of vitamins and minerals.
- It occurs when the quality of food people eat does not meet the nutrient requirements.
- The food is deficient in micronutrients such as the vitamins and minerals that are needed for their growth and development.

### Causes of Malnutrition

- **Food & nutrition insecurity**: Increased food and nutrition insecurity has severely weakened the immune system of people contributing to poor growth & intellectual impairment and has lowered human capital and development prospects.
- **Inequity**: Inequity is a cause of malnutrition — both under-nutrition and overweight, obesity and other diet-related chronic diseases.
- **Inadequate Dietary Intake**: Inadequate dietary intake and disease are directly responsible for undernutrition, but multiple indirect determinants
exacerbate these causes.

**Major causes:**
- Food insecurity
- Inadequate childcare practices
- Low maternal education
- Poor access to health services
- Lack of access to clean water and sanitation
- Poor hygiene practices

**Covid-19 and Malnutrition**

- The nationwide lockdown has disrupted access to essential services, including Mid-Day Meals, which are not only a nutritional measure to supplement some portion of a child’s calorie needs but is also a tool to access education.
- Through a concurrent rapid needs assessment, Save the Children found that around 40% of eligible children have not received mid-day meal during the lockdown.

**India’s position**

- **Global Nutrition Report-2020:** As per the Global Nutrition Report 2020, India is among 88 countries that are likely to miss global nutrition targets by 2025.
- **Malnourished children in India:** Malnutrition in India accounts for 68% of total under-five deaths and 17% of the total disability-adjusted life years.
- India is home to about 30% of the world’s stunted children and nearly 50 per cent of severely wasted children under the age of five.

**Other data**

- **FAO estimates:** The Food and Agriculture Organization (FAO) estimates that 194.4 million people in India (about 14.5% of the total population) are undernourished.
- **Global Hunger Index-2019:** India ranks 102 out of 117 countries in the Global Hunger Index 2019.
- **Wasting rate:** India’s wasting rate is extremely high at 20.8% — the highest wasting rate of any country.
- **Nutrition interventions:** They are not sufficient to tackle the problem of undernutrition: Even at 90% coverage, the core set of proven nutrition-specific interventions would only decrease stunting by 20 per cent.
- **Covid-19:** Covid-19 has posed serious threats to children and their health and nutritional rights.
According to recent estimates, even in the best possible scenario and accounting for changes in the provision of essential health and nutrition services due to COVID-19, India could have around additional 60,000 child deaths (around 3,00,000 in the worst-case scenario) in the next six months.

**Measures Taken**

- **World Food Day**: it is observed annually on **October 16** to address the problem of global hunger.
- **POSHAN Abhiyaan**: The government of India had launched the National Nutrition Mission (NNM) or POSHAN Abhiyaan to ensure a “**Malnutrition Free India**” by 2022.
- **Anaemia Mukt Bharat Abhiyan**: Launched in 2018, the mission aims at accelerating the annual rate of decline of anaemia from **one to three percentage points**.
- **Mid-day Meal (MDM) scheme**: aims to improve nutritional levels among school children which also has a direct and positive impact on enrolment, retention and attendance in schools.
- **The National Food Security Act (NFSA), 2013**: aims to ensure food and nutrition security for the most vulnerable through its associated schemes and programmes, making access to food a legal right.
- **Pradhan Mantri Matru Vandana Yojana (PMMVY)**: Rs.6,000 is transferred directly to the bank accounts of pregnant women for availing better facilities for their delivery.
- **Integrated Child Development Services (ICDS) Scheme**: launched in 1975, the scheme aims at providing food, preschool education, primary healthcare, immunization, health check-up and referral services to children under 6 years of age and their mothers.

**Way forward**

- There is a need to explore possible solutions and put forward key policy and programme proposals for the integrated management of acute malnutrition and mitigating the impact of Covid-19.
- For easy and sustained access to nutritious food, the spotlight back should be brought back on locally-available, low-cost nutritious food.
- More encouragement should be given to maternal, infant and young child nutrition actions.
- Strategies like ‘**take-home ration**’ and ‘**mid-day meal service**’ to ensure the continuation of services and coverage of the most vulnerable communities, especially in urban areas. Child-sensitive social protection schemes, like
Pradhan Mantri Matru Vandana Yojna (PMMVY), need to be implemented in a way so that they reach the last child.

- Strict measures are needed to ensure that the Public Distribution System (PDS) is accessible to all, especially the vulnerable population.
- The use of newer technologies in service delivery, data management, evidence generation and real-time monitoring should be encouraged for maximum use in these processes.

Source: TH

---

**Cryptocurrency and China**

**GS-III | 23 June, 2021**

**Cryptocurrency and China**

**What is Blockchain Technology?**

- Blockchains are a new data structure that is **secure**, **cryptography-based**, and distributed across a network. The technology supports cryptocurrencies such as **Bitcoin**, and the transfer of any data or digital asset.
- Spearheaded by Bitcoin, blockchains **achieve consensus among distributed nodes**, allowing the transfer of digital goods **without the need for centralized authorisation** of transactions.
- The technology allows transactions to be **simultaneously anonymous** and secure, peer-to-peer, instant and frictionless.
- It does this by distributing trust from powerful intermediaries to a large global network, which through mass collaboration, clever code and cryptography, enables a **tamper-proof public ledger of every transaction** that’s ever happened on the network.
- **A block** is the “**current**” part of a blockchain which **records** some or all of the recent **transactions**, and once completed, goes into the blockchain as **permanent database**. Each time a block gets completed, a **new block** is generated. Blocks are linked to each other (like a chain) in proper linear, **chronological order** with every block containing a hash of the previous block.
Benefits of blockchain technology:
1. As a public ledger system, it records and validates each and every transaction made, which makes it **secure and reliable**.
2. All the transactions made are **authorized by miners**, which makes the transactions **immutable** and prevent it from the threat of **hacking**.
3. Blockchain technology **discards the need of any third-party** or central authority for peer-to-peer transactions.
4. It allows **decentralization** of the technology.

**What is Bitcoin?**

- Bitcoin is a type of digital currency that enables instant payments to anyone.
- Bitcoin was introduced in 2009.
- Bitcoin is based on an open-source protocol and is not issued by any central authority.
- Bitcoin is a peer-to-peer currency.
- Bitcoin is the first decentralised digital currency.
- The price of the world's most prominent cryptocurrency Bitcoin has more than halved in the last two months after hitting a peak in mid-April.
- The second-most valuable cryptocurrency, Ether, has seen a similar fall from its peak last month.
- China's crackdown against cryptocurrencies, which are those that aren't sanctioned by a centralised authority and are secured by cryptography, is said to have a lot to do with the crashing of the value of cryptocurrencies.

**What has China done?**

- In recent weeks, China has reportedly cracked down on crypto mining operations.
- The country has over the years accounted for a large percentage of the total crypto mining activity that takes place.
- In purpose, Bitcoin miners play a similar role to gold miners — they bring new Bitcoins into circulation.
- They get these as a reward for validating transactions, which require the successful computation of a mathematical puzzle.
- And these computations have become ever-increasingly complex, and therefore energy-intensive in recent years.
- Huge mining operations are now inevitable if one is to mine Bitcoins.
- Access to cheap electricity has made mining lucrative in China.
- According to the Cambridge Bitcoin Electricity Consumption Index, China accounted for nearly two-thirds of the total computational power last year. Xinjiang and Sichuan provinces accounted for nearly half of this.
- Now, provincial governments one by one have acted against these mining operations.
operations. The latest to do so is Sichuan, which was a hydroelectric-based crypto mining hub.

- But that’s not all. A few days back, the People's Bank of China directed banks and payment firms to pull the plug on cryptocurrency trading.
- Actually, there is little change in the policy as far as China is concerned. It first imposed restrictions on cryptocurrencies way back in 2013. It then barred financial institutions from handling Bitcoin.
- Four years later, it barred what are called initial coin offerings, under which firms raise money by selling their own new cryptocurrencies. This is largely an unregulated market.

What China wants?

- An inter-ministerial committee report in India two years ago noted that in 2017, the government of China also banned trading between RMB (China’s currency renminbi) and cryptocurrencies.
- It said, “Before the ban, RMB made up 90% of Bitcoin trades worldwide. In under a year, the trades between RMB and Bitcoin had fallen to under 1% of the world total.”
- The report also noted that China had decided to prohibit mining within its jurisdiction.
- While the miners had stopped their activities for some time, the steep increase in the price of Bitcoin had brought many back into action.
- The fact that cryptocurrencies bypass official institutions has been a reason for unease in many governments.
- Not just that. The anonymity that it offers aids in the flourishing of dark trades online. While many countries have opted to regulate the world of cryptocurrencies, China has taken the strictest of measures over the years.
- According to observers, the latest set of measures are to strengthen its monetary hold and also project its new official digital currency.
- An AFP report said, “China launched tests for a digital yuan in March. Its aim is to allow Beijing to conduct transactions in its own currency around the world, reducing dependency on the dollar which remains dominant internationally.”

Way Forward: European Example EU is working on Anti Money Laundering Directive AMLD. All cryptocurrencies and wallet will have to do KYC norms and register with local authority. India should follow EU example.
Money Laundering

What is Money Laundering?

- Money Laundering refers to converting illegal earned money into legitimate money.
- The government does not get any tax on the money because there is no accounting of the black money.
- So Money Laundering is a way to hide the illegally acquired money.
- The term "money laundering" originated from the Mafia group in the United States of America. Mafia groups have made huge amounts of extortion, gambling, etc. and this money is shown as legal money.
- In India, "money laundering" is popularly known as Hawala transactions.
- According to the IMF, global Money Laundering is estimated between 2 to 5% of World GDP.

Components of Money Laundering:

It involves three steps: placement, layering and integration.

- **Placement** puts the "dirty money" into the legitimate financial system.
- **Layering** conceals the source of the money through a series of transactions and bookkeeping tricks.
- In the case of **integration**, the now-laundered money is withdrawn from the legitimate account to be used for criminal activities.
- Some examples of Money laundering are Smurfing, Shell companies, Round tripping, Gambling, etc.

Impacts of money Laundering:

- Economic Impact:
  1. Undermines integrity of financial markets.
  2. Loss of control of economic policy
  3. Economic distortion and instability
  4. Loss of revenue

- Social Impacts:
  1. Increased criminality
  2. Decreases human development
  3. Misallocation of resources
4. Affects trust of local citizens in their domestic financial institutions.

- **Political Impacts:**
  1. Initiates political distrust and instability
  2. Criminalisation of politics

The Legal Framework in India to deal with Money Laundering:

In India, the specific legislation dealing with money laundering is the **Prevention of Money-Laundering Act (PMLA), 2002**

- It forms the core of the legal framework put in place by India to combat Money Laundering.
- The provisions of this act are applicable to all financial institutions, banks (including RBI), mutual funds, insurance companies, and their financial intermediaries.
- The law was enacted to combat money laundering in India and has three main objectives:
  1. To prevent and control money laundering.
  2. To provide for confiscation and seizure of property obtained from laundered money.
  3. To deal with any other issue connected with money-laundering in India.

- Under the PMLA Act, the **Enforcement Directorate** is empowered to conduct a Money Laundering investigation.
- Apart from the provisions of PMLA, there are other specialised provisions such as RBI/SEBI/IRDA anti-money laundering regulations.

**PMLA (Amendment) Act, 2012**

- Adds the concept of ‘**reporting entity**’ which would include a banking company, financial institution, intermediary etc.
- PMLA, 2002 levied a fine up to Rs 5 lakh, but the **amendment act has removed this upper limit** of Rs. 5 lakh.
- It has provided for **provisional attachment and confiscation of property** of any person involved in such activities.

Other methods to control Money Laundering:
Delimitation of Jammu & Kashmir

What is the news?

- The Delimitation Commission for the Union Territory of Jammu and Kashmir has kicked off the exercise by writing to all 20 District Commissioners (DC), seeking basic demographic, topographic information as well as the local administration’s impressions of political aspirations of the district.
- The Commission was set up in February-March 2020 to delineate Assembly and parliamentary constituencies, and was given a year’s extension last March.
- It is only after the completion of the delimitation exercise that elections for the Assembly can be held, although District Development Council (DDC) polls were held last year on earlier patterns and based on the 2011 Census.
The then State of Jammu and Kashmir was kept out of the delimitation exercise when it was carried out in the rest of country (between 2002-2008), as delimitation of Assembly seats was under the Jammu and Kashmir Constitution and its separate Representation of People Act.

After becoming a Union Territory, the Delimitation Commission was constituted and asked to mark out Assembly and Parliament seats.

The Commission, headed by Justice (retired) Ranjana Prakash Desai and comprising two other members, had called for a meeting in February 2021, where only two of its five associate members — Union Minister Jitendra Singh and Jugal Kishore Singh, MP — attended. National Conference leaders Dr. Farooq Abdullah and Hasnain Masoodi, MP, and Mohammad Akbar Lone did not attend.

The renewed push by the Centre for talks has raised hopes not only of early Assembly elections in Jammu and Kashmir but also of an eventual restoration of statehood, which was taken away under the Jammu and Kashmir Reorganisation Act, 2019, a reading down of Article 370 of the Constitution.

Why Delimitation is important?

- To provide equal representation to equal segments of a population.
- Fair division of geographical areas so that one political party doesn’t have an advantage over others in an election.
- To follow the principle of “One Vote One Value”.

Constitutional Provisions regarding Delimitation:

- Under Article 82, the Parliament enacts a Delimitation Act after every Census.
- Under Article 170, States also get divided into territorial constituencies as per Delimitation Act after every Census.
- Once the Act is in force, the Union government sets up a Delimitation Commission.
- The first delimitation exercise was carried out by the President (with the help of the Election Commission) in 1950-51.
- The Delimitation Commission Act was enacted in 1952.
- There was no delimitation after the 1981 and 1991 Censuses.

Delimitation Commission
The Delimitation Commission is appointed by the President of India and works in collaboration with the Election Commission of India. Composition: Retired Supreme Court judge, Chief Election Commissioner and Respective State Election Commissioners.

Functions:
1. To determine the number and boundaries of constituencies to make population of all constituencies nearly equal.
2. To identify seats reserved for Scheduled Castes and Scheduled Tribes, wherever their population is relatively large.
3. In case of difference of opinion among members of the Commission, the opinion of the majority prevails.

The Delimitation Commission in India is a high power body whose orders have the force of law and cannot be called in question before any court.

Problems with Delimitation

- States that take little interest in population control could end up with a greater number of seats in Parliament. The southern states that promoted family planning faced the possibility of having their seats reduced.
- In 2008, Delimitation was done based on the 2001 census, but the total number of seats in the Assemblies and Parliament decided as per the 1971 Census was not changed.
- The constitution has also capped the number of Lok Shaba & Rajya Sabha seats to a maximum of 550 & 250 respectively and increasing populations are being represented by a single representative.

Source: TH

Ranil Wickremesinghe returns to Sri Lankan Parliament

Ranil Wickremesinghe returns to Sri Lankan Parliament: Sri Lanka Civil War

What is the news?
Former Prime Minister of Sri Lanka Ranil Wickremesinghe returned to Parliament, 10 months after his United National Party (UNP) suffered its biggest electoral defeat in history.

In the first intervention by his party in the current legislature, Mr. Wickremesinghe slammed the Rajapaksa government on its economic policy that, he said, lacked a plan amid a crisis, and growing militarisation of civil services.

Though the UNP didn’t win a single seat in the 2020 general election, it had enough cumulative votes to nominate one member under its ‘national list’, a system in which a party can win seats proportionate to its share of total votes polled.

“I am happy to be able to come to Parliament and resume my parliamentary political life,” said Mr. Wickremesinghe, who was first elected as an MP in 1977. He was in all Parliaments since, except after he lost the election last year, when the Rajapaksas rose to power with a thumping majority.

The Samagi Jana Balawegaya (SJB, or United People’s Front), formed by those who broke away from the UNP, is Sri Lanka’s main Opposition party, led by Sajith Premadasa.

Pointing to Sri Lanka’s foreign reserves, Mr. Wickremesinghe said the balance had fallen from $7 billion, when his government was in power (2015-2019), to $4 billion at present.

“By the end of this month, Sri Lanka has a debt of $1 billion to repay. We have to repay another loan of around $2 billion this year. We have no plan on how to pay for these,” he said, urging the government to sign up for an International Monetary Fund (IMF) deal.

Mr. Wickremesinghe accused the government of giving tax relief to “big people” while “starving small people”.

Background

The majority of Sri Lankans are ethnic Sinhalese, a group of Indo-European peoples that had migrated to the island from northern India in the BC 500s (during Mauryan Empire).

The Sinhalese had contacts with the Tamils who were settled in the southern part of the Indian subcontinent.

A major migration of the Tamils occurred between the 7th and the 11th centuries CE especially during Cholas (Rajaraja Chola and Rajendra Chola).

Britishers is the historical reason for Sri Lanka Civil War?
When the British started ruling the country in 1815, the approximate population of the Sinhalese was roughly 3 million and the Tamils numbered up to 300,000.

Apart from the ethnicities, the two groups also differed in their religious affiliations.

The Sinhalese were predominantly Buddhist and the Tamils were mostly Hindu.

The British ruled over Sri Lanka from 1815 to 1948.

During this time, they brought nearly a million Tamils to work in the coffee, tea and rubber plantations to the island-nation.

The British also set up good educational and other infrastructure in the northern part of the country, which was where the Tamils were in a majority.

They also favoured the Tamils in the civil service.

All this naturally fostered ill-feeling among the Sinhalese.

What happened after Independence?

- Sri Lanka attained independence from British on 4 February 1948.
- After attaining independence, the new government initiated many laws that discriminated against the Tamils.
- Sinhalese was declared the sole official language which effectively eliminated the Tamils from government service.
- A law was also passed which simply barred Indian Tamils from getting citizenship.
- The Tamils started demanding equal rights in their homeland. Their demands were just and their methods peaceful.
- However, ethnic tension was rising in the country and the successive Sinhalese governments did nothing to provide equal rights and opportunities to the Tamil people. They were even targets of sectarian violence.
- In 1972, the Sinhalese changed the country’s name from Ceylon to Sri Lanka and made Buddhism the nation’s primary religion.

Liberation Tigers of Tamil Eelam

- The LTTE (Liberation Tigers of Tamil Eelam) was formed in 1976 by Prabhakaran with the intention of acquiring a homeland for the Tamils in Sri Lanka in the north and east parts of the island.
- As ethnic tension grew, in 1976, the LTTE was formed under the leadership of Velupillai Prabhakaran, and it began to campaign for a Tamil homeland in northern and eastern Sri Lanka, where most of the island’s Tamils reside.
- In 1983, the LTTE ambushed an army convoy, killing thirteen
soldiers and triggering riots in which 2,500 Tamils died.
- The group first struck in July 1983 when they attacked an army patrol at Tirunelveli in Jaffna.
- 13 army men were killed which prompted violence on civilian Tamils by the majority community.
- The initial days of the LTTE were focused on fighting other Tamil factions and consolidating power as the sole representative of the Sri Lankan Tamils.
- This was achieved by 1986, the same year it captured Jaffna.
- There were many skirmishes between the government and the insurgents in which civilians were also affected. Many Tamils left their homes for the eastern part of the country.

What happened after Independence?
- As Ethnic ties have bound southern India and Sri Lanka for more than two millennia. India is a home to more than 60 million of the world’s 77 million Tamils, while about 4 million live in Sri Lanka.
- The Palk Strait, about 40 km (25 miles) wide at its narrowest point, separates the southern Indian state of Tamil Nadu and northern Sri Lanka, traditionally the main Tamil area of the Indian Ocean island.
- When war between Sri Lankan Tamils and the Sinhalese majority erupted in 1983, India took an active role.
- Indo-Sri Lankan Accord was signed in 1987 to provide a political solution to Sri Lanka’s conflict.
- It proposed the establishment of provincial council system and devolution of power for nine provinces in Sri Lanka (also known as The Thirteenth Amendment).

Indian Intervention in the Sri Lankan Civil War
- Indian Peacekeeping Force (IPKF) was sent to the island in the hope of bringing about peace.
- India deployed Indian Peace Keeping Force (IPKF) in Sri Lanka under Operation Pawan to disarm the different militant group.
- IPKF was later withdrawn after three years amidst escalating violence.
- In 1987, Rajiv Gandhi decided to intervene in the situation mainly because of separatism issues in Tamil Nadu and also to avoid the potential swarm of refugees from Sri Lanka to Indian shores, setting a new stage for the India-Sri Lanka relations.
This move proved to be a terrible disaster. Instead of negotiating a settlement between both parties, the Indian troops ended up fighting the Eelam group. About 1200 Indian men died in the war.

- Rajiv Gandhi was also a victim of the LTTE when in 1991, he was assassinated by a human bomb at an election rally in Sriperumbudur in Tamil Nadu.
- After the IPKF had withdrawn in 1990, the fighting continued more intensely. Sri Lankan President Premadasa was also killed by the LTTE in 1993 in a human bomb.
- The LTTE, at its height, was a full-fledged militia with even an air force of its own. It employed women and even children in their activities.
- The war went on with numerous counts of atrocities and brutalities perpetrated by both sides. The civilians also suffered terribly. Lakhs of people were displaced in the protracted war.
- A ceasefire was declared a few times by the LTTE, only to resume fighting later. Peace talks were also held with the intervention of international actors, particularly Norway. Nothing came to any avail.

Results of the Sri Lankan Civil War

- Finally, the Rajapaksa government decided to come hard on the LTTE in an extreme offensive starting in 2007.
- There was intense fighting between the government forces and the LTTE in which thousands of civilians were caught in the line of fire.
- The government was also accused of targeting civilians and destroying entire villages.
- The violent conflict was ended in 2009 and at that point of India has agreed to reconstruct the war-torn areas and started many rehabilitation programs.
- International and United Nations observers describe the events that led to the defeat of the LTTE in 2009 as a ‘bloodbath’.
- On 19th May, the president of the country declared to the parliament that the LTTE leader Prabhakaran was killed and that the war had been won by the government forces.
- Many heaved a sigh of relief as the bloody war had proved far too costly. However, there have been speculations that the army had killed many Tamil leaders after they had surrendered.
- It is suggested that in the final days of the war, about 40,000 people had lost lives. The Sri Lankan government faced a huge task of providing relief and aid to the displaced and injured. The total cost of the 26-year war is
Climate crisis to hit sooner
GS-III | 24 June, 2021

What is the news?

- Climate change will fundamentally reshape life on Earth in the coming decades, even if humans can tame planet-warming greenhouse gas emissions, according to a landmark draft report from the UN’s climate science advisers obtained by AFP.
- Earlier models predicted that we were not likely to see Earth-altering climate change before 2100. But the UN draft report says that prolonged warming even beyond the threshold of 1.5 degrees Celsius could produce “progressively serious, centuries’ long and, in some cases, irreversible consequences”.
- Dangerous thresholds are closer than once thought, and dire consequences stemming from decades of carbon pollution are unavoidable in the short term.

About Climate Change
Context: Climate Change is one of the most important topics for UPSC Prelims 2021 and it is also important for Mains Answer Writing for IAS Mains 2021. Hence, AspireIAS has come up with a comprehensive document for Climate Change.

What is Climate?

- Weather is what conditions of the atmosphere are over a short period of time.
and climate is how the atmosphere "behaves" over relatively long periods of time (like 100 years).

- Climate change is a complex problem, although Environmental in nature, has consequences for all spheres. It impacts poverty, economic development, population growth, sustainable development and resource management. Hence the solutions should come from all disciplines.

Club of Rome

- After World War 2, there emerged a group in 1968 called the Club of Rome. They came up with a model known as Limit’s to Growth model.
- The team tracked industrialisation, population, food, use of resources, and pollution.
- They modelled data up to 1970, then developed a range of scenarios out to 2100, depending on whether humanity took serious action on environmental and resource issues. If that didn’t happen, the model predicted “overshoot and collapse” – in the economy, environment and population – before 2070.
- This was called the “business-as-usual” scenario.
- The book’s central point, much criticised since, is that “the earth is finite” and the quest for unlimited growth in population, material goods etc would eventually lead to a crash.
- Thus, it talked about Sustainable development.
The Silent Spring

Silent Spring is an environmental science book by Rachel Carson. The book was published on September 27, 1962, documenting the adverse environmental effects caused by the indiscriminate use of pesticides. Carson accused the chemical industry of spreading disinformation, and public officials of accepting the industry’s marketing claims unquestioningly.

Stockholm Conference/ UNCHE (Conference on Human Environment)/ Man Environment summit, 1972
Stockholm Conference was an international conference convened under United Nations auspices held in Stockholm, Sweden from June 5-16, 1972. It was the UN's first major conference on international environmental issues, and marked a turning point in the development of international environmental politics.

- It brought the industrialized and developed countries together.
- It did not discuss about Climate Change but only about pollution & Environmental degradation.
- To delineate the rights of the human family to a healthy and productive environment.
- It discussed on the rights of people to adequate food, to sound housing, to safe water, to access to means of family planning.

World Commission on Environment and Development (WCED)
WCED was created in 1983 as an independent body by UNGA. WCED was asked to formulate 'A global agenda for change'.


It gave concept of “sustainable development”

The Brundtland Commission’s characterization of ‘sustainable development’ is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The prominence given to ‘needs’ reflects a concern to eradicate poverty and meet basic human needs, broadly understood.

The concept of sustainable development focused attention on finding strategies to promote economic and social development in ways that avoided environmental degradation, over-exploitation or pollution, and side lined less productive debates about whether to prioritize development or the environment.

IPCC (The Intergovernmental Panel on Climate Change)
 IPCC was established by World Meteorological Organization and UNEP in 1988. It is a Statistical organization or Intergovernmental body.

IPCC is the scientific body under UN for assessing the science related to climate change.

The membership is open to all members of UN and WMO. Currently 195 countries are the members.

It accepted Climate change in 1988. It does not conduct its own original research nor does it monitor climate related data.

Thousands of scientists work on voluntary basis. It also got Nobel Peace Prize in 2007.

The aim of IPCC is

1. To provide political leaders with periodic scientific assessments concerning climate change, its implications and risks, as well as to put forward adaptation and mitigation strategies.
2. To assess scientific information regarding human induced Climate change and its impact and options for adaptation and mitigation.
3. It produces reports not just for Greenhouse Gases but on topics like aviation, regional impacts of Climate change, technology transfer, land use, CO2 capture and storage and on the relation between safeguarding ozone layer.

The IPCC has three working groups:

1. Working Group I, dealing with the physical science basis of climate change.
2. Working Group II, dealing with impacts, adaptation and vulnerability.
3. Working Group III, dealing with the mitigation of climate change.
Aim: To stabilize the GHG concentrations at a level that would prevent dangerous anthropogenic interference with Climate system.

The following legally binding agreements (Rio Convention) were opened for signature:

1. Convention on Biological Diversity (UNCBD)
2. Framework Convention on Climate Change (UNFCCC)
3. Convention to Combat Desertification (UNCCD)

UNFCCC: (entered in Force in 1994): It has near universal membership. 195 countries ratified. Focus

1. Adaptation: adjustment in ecological, social or economic systems in response to actual or expected climatic changes. Ex Agriculture pattern.
2. It has 5 components: Observation; Assessment of climate impacts and vulnerability; Planning; Implementation and Monitoring and evaluation of adaptation actions.
3. Climate Finance (through Green Climate Fund): Annex II parties (Developed countries) are to provide finances to assist Developing countries.

GEF (Global Environment Facility)

1. GEF was established in 1992 Rio Summit. It is a partnership of 183
2. It Grants funds for Environment projects. Since it's inception it has provided $17.9 bn in grants.
3. It is a financial mechanism for 6 Environmental conventions: UNFCCC, UNCCD, UNCBD, Montreal Protocol on Ozone, Minamata Convention on Mercury, Stockholm for POP.
4. World Bank is the trustee of GEF & administers it.
5. Council is the GEF's main governing body of 32 members (14:16:2:: Developed:Developing:Economic in Transition).

- **Agenda 21**
  1. It is a non binding, voluntarily implemented action plan of UN for sustainable development.
  2. UNCCD has come from direct recommendation of Agenda 21.
  3. In 1993, UNCED established the Commission on Sustainable Development (CSD) to follow up on the implementation of Agenda 21.

### 1997 Kyoto Protocol and UNFCCC

- Kyoto Protocol was adopted in 1997 and entered into force in 2005. 191 countries adopted it.
- Through Marrakesh Accords the 2008 - 2012 1st Commitment period. Detailed rules for implementation were adopted.
- Doha Amendment = 2013 - 2020, revised GHG list and New commitments for Annex I.
- It is the first Internationally binding treaty to control emission for Climate change. It legally binds developed countries to emission reduction targets. USA never ratified Kyoto protocol.
- Kyoto Protocol has 6 GHGs = CO2, Methane, Nitrous Oxide (N20), Perfluorocarbons (PFCs), Hydrofluorocarbons (HFCs) and Sulfur Hexafluoride (SF6).
- **3 Parties**
  1. **Annex I** = industrialized countries that are members of OECD + Economies in Transition (EIT) including Russia, Baltic States and Central and Eastern European states.
  2. **Annex II** = OECD members but not EIT parties. They must provide financial resources for Developing countries. Provide finance to GCF.
  3. **Non Annex I** = Mostly developing. UN recognised LDCs. Especially vulnerable to CC, Desertification, drought.
Kyoto Mechanism

1. It includes Joint Implementation (JI), Clean Development Mechanism (CDM), Emissions Trading, Climate Change.

2. Emissions trading: Countries buy 'Kyoto units' from other to help meet domestic Emission reduction targets.

3. CDM: meet their domestic Emission reduction targets by buying GHG reduction units from non Annex I countries. Invest in Renewable Energy projects.

4. Joint Implementation: Any Annex I country can invest in emission reduction projects (JI projects) in any other Annex I country as an alternative to reduce emissions domestically.

Important UNFCCC Summits

1) Bali Summit (COP 13, 2007)

- It has Bali roadmap which gave long term plan for the 1st time.
- Reaching an agreed outcome and adopting a decision at COP15 in Copenhagen.
- The review of the financial mechanism, going beyond the existing Global Environmental Facility.

2) Poznan (Poland) Climate Change Conference (COP 14, 2008)

- It launched the Adaptation Fund under the Kyoto Protocol.
- The Fund is financed in part by government and private donors, and also from a 2% share of proceeds of Certified Emission Reductions (CERs) issued under Clean Development Mechanism projects.

3) Copenhagen (Denmark) Climate Change Conference (COP 15, 2009)

- The Copenhagen Accord included the goal of limiting the maximum global average temperature increase to no more than 2 degrees Celsius above pre-industrial levels, subject to a review in 2015.
- Developed countries promised to provide US$30 billion for the period 2010-2012, and to mobilize long-term finance of a further US$100 billion a year by 2020 from a variety of sources.
4) Cancun (COP 16, 2010)

- UK was the head.
- **Green Climate Fund** was formed in Cancun summit

1. It was formed in Cancun summit (100 bn $/ year by 2020 will be given by developed to developing). HQ = Incheon, South Korea. World Bank is the trustee.
2. GCF will have thematic funding windows. It gives support to Developing countries to reduce GHG emissions and adapt to Climate change.
3. GCF is accountable to and functions under COP.

- **Technology mechanisms (CTCN, TEC, TICH)**
  1. CTCN (Climate Technology Center Network) = Technology development and transfer actions that support mitigation and adaptation.
  2. TEC (Technology Executive Committee) = implement technology transfer framework with support in developing countries through TNA (Technology Need Assessment process under Poznan strategic program on technology transfer).
  3. TICH (Tech Information Clearing House) = provide information.


- The outcomes included a decision by Parties to adopt a universal legal agreement on climate change as soon as possible, and no later than 2015.
- Second phase of Kyoto Protocol was secured.
- Approved the Governing Instrument for the GCF.
- Formulate a Draft paper of Kyoto Protocol II (KP II) by 2015.
- Discuss the draft paper, clause by clause between 2015-20.
- 100% implementation of Kyoto Protocol II by 2020. Till then extend Kyoto Protocol I till 2017.
- Target 2°C by end of 21st C. (Not 1.5 degree - It was in Paris)
- Think about small Island countries and Sea level rise.

6) Doha (COP 18, 2012)

- The conference reached an agreement to extend the life of the Kyoto Protocol, which had been due to expire at the end of 2012, until 2020 (second commitment period 2013 – 2020).
- The extension of the Kyoto Protocol until 2020 limited in scope to only 15% of
the global CO2 emissions. This was due to the lack of participation of Canada, Japan, Russia, Belarus, Ukraine, New Zealand and the United States. (they all refused to join the second commitment period under the Kyoto Protocol)

- Also, developing countries like China, India and Brazil are not subject to any emissions reductions under the Kyoto Protocol.
- It endorsed South Korea as the host of GCF.

7) Warsaw (COP 19, 2013)

- The conference led to an agreement that all states would start cutting emissions as soon as possible, but preferably by the first quarter of 2015.
- The term *Intended Nationally Determined Contributions* was coined in Warsaw.
- UN REDD was converted into UNFCCC’s “REDD +” = Reducing Emissions from Deforestation and Degradation Plus.

1. REDD was a programme initiated by UN in 2005. To mitigate climate change through enhanced Forest management in developing countries. It creates a financial value for carbon stored in forests by offering incentives for developing countries to reduce emissions. Now, UN-REDD Programme assists countries develop capacities needed to achieve UNFCCC's REDD+ initiative.

- REDD + is a UNFCCC mechanism to incentivize developing countries to better manage, protect and save forests to help in climate change. The talks for REDD+ started in Montreal summit but established in Warsaw summit. 45% of CO2 can be absorbed from Forests. REDD + could capture 1 billion tonnes of additional CO2 over next 3 decades. It goes beyond merely checking deforestation and forest degradation, and includes
- REDD+ is Result based = Developing country will have to prove the result 1st, only then they'll get the money through Green Climate Fund.
- **Forest Carbon Partnership Facility**: World Bank is the trustee. It is the partnership of govs, businesses, civil society & indigenous people. For REDD+ incentives. Inter American Development Bank, UNDP are delivery partners under the Readiness Fund and responsible for providing REDD+ services.
- **BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL)** is a multilateral fund supported by donor govt & managed by World Bank. It seeks to promote reduced GHG emissions from land sector.
- World Bank’s Forest Investment Programme is also a part of REDD +.
Lost and Damage: Lost (permanent loss includes economic/non-economic losses) and Damage (which is repairable like deforestation & temperature rise). Poor countries want money from rich for the CC.

Further the Warsaw Mechanism was proposed, which would provide expertise, and possibly aid, to developing nations to cope with loss and damage from such natural extremities as heatwaves, droughts and floods and threats such as rising sea levels and desertification.

8) Lima Summit (COP 20, 2014)

9) Paris Summit (COP 21, 2015)

- Reduce Global average temperature < 2°C and try for < 1.5°C (for the 1st time).
- Move away from CBDR (Common but differentiated responsibilities and new INDC which talks about post 2020 climate actions).
- India's INDC (Intended Nationally Determined Contributions) are:
  1. Reduce Carbon intensity of its GDP by 33 - 35% by 2030 from 2005 levels.
  2. Additional Carbon sink of 2.5 - 3 billion tonnes of CO2 equivalent through additional forest & tree cover by 2030.
  3. Increase share of Renewable Energy to 40% of Total Energy.
- CDKN (Climate and Development Knowledge Network) created a guide for NDC implementation for LDCs.
- International Solar Alliance, 2015
  1. 1st treaty based Inter-governmental organization based in India.
  2. HQ at National Institute of Solar Energy, Gurugram.
  3. Objectives = 1000 GW of Solar capacity globally & 1000 bn $ investment by 2030.
  4. All 121 countries between Tropics to now all invited.
- Bonn Challenge (Forest Landscape Restoration) =
  1. Restore 150 million ha of deforested and degraded land by 2020 and 350 mn ha by 2030.
  2. Launched by Germany & IUCN. Extended to 2030 by New York declaration.
- Global Stocktake (GST): is a 5 yearly review of impact of countries’ climate change actions. Under the Paris Agreement 1st GST will happen in 2023.
  - Long term goal to achieve net zero emissions.
  - 4 new things were included
1. Global Forest Watch Climate = Potential to shift debate on monitoring forest based emissions.
2. African Forest and Landscape Restoration Initiative (AFR 100) to restore 100 mn ha of degraded and deforested land in Africa.
3. Initiative 20x20 is a landscape restoration effort in Latin American & Caribbean countries (28 mn ha)
4. World Resource Institute announced 25 new partners to Building Efficiency Accelerator as a part if UN SE4All initiative (GM Times).

Marrakech (COP 22, 2016):

Bonn (COP 23, 2017)

Katowice (COP 24, 2018) =

- Technology: e-Vehicles & e Mobility; Sustainable cities & Urbanisation.
- Responsibility of individual cities.
- More Renewable Energy through attitudinal change.
- Afforestation, Implementation of GCF.
- Talanoa Dialogue = Led by Fiji. 1st ever International conversation of its kind to assess progress towards goals of Paris. 1.5°C relevance.
- 1st Virtual Climate Summit, 2018 is a part of Talanoa dialogue.
- It was organized by Climate Action Network (CAN) and Climate Vulnerable Forum (CVF). CVF was formed in Copenhagen Summit. Formed by Maldives Govt.
- 1.5°C target by 2020 by improving INDCs.
- Adopted Jummemj Declaration = call to action if vigilance against threats.
- Vulnerable nations stepping up and showing real climate leadership.


- EU is working on a legislation to bring about Net 0 Emissions. UK has also turned its Net 0 2020 Goal into a legal requirement.
- The international community lost an important opportunity to show increased ambition on mitigation, adaptation and finance to tackle the climate change.

Next Climate Summit is in Glassgow, UK. Issues to be discussed are liability for damages caused by rising temperatures that developing countries were insisting on.

For the Article related to 5 Year anniversary of Paris summit: click here
BRICS

- BRIC was formed in 2006. South Africa joined in 2012. It is an informal organization with no charter.
- All coming as a part of changing world order, South South cooperation, multilateralism, increased accommodation in global, attracting investment & stab eco system.
- It was formed in the context China and India, by 2050, become the world's dominant suppliers of manufactured goods and services.
- The term BRIC was coined by Goldman Sachs Economists like Jim O’Neill. O’Neill’s paper was named “Building Better Economic BRICS”.
- It comprises 42% of the world's population, has 23% of the global GDP but
just 17% of the world trade.

- BRICS represents the World’s top emerging economies and claims to serve as a bridge between the developed and developing World.
- Objectives: More sustainable, equitable and mutually beneficial development.

There are 4 main areas of cooperation:

- **Economic cooperation**: in Innovation, Customs and Strategic cooperation between BRICS Business Council. Contingent Reserve Agreement and NDB.
- **People to People Exchange**: in culture, sports, education, film and youth. Eg. Young Diplomats Forum, Parliamentarian Forum, Civil BRICS etc.
- **Political and Security Cooperation**: aimed at achieving peace, security, development and cooperation. BRICS is used as a driver for African Agenda and South-South cooperation.
- **Cooperation Mechanism**
  1. Track I (Government to Government);
  2. Track II (Government affiliated institutions) and
  3. Track III (People to people).
- **Chairperson**: The Chair country goes by the name B, R, I, C, S in that order. 2019 – Brazil was the Chair. 2020 – Russia. **In 2021 India will host 13th BRICS Summit and India is a Chair in 2021.**

**BRICS Summits**

- **2017 Summit in Xiamen, China**
  1. China introduced **BRICS +** by inviting a few countries from different regions like Argentina, Jamaica, Turkey, Indonesia and Egypt.
- **2018 Summit in Johannesburg, South Africa**:
  1. Theme was BRICS in Africa: Collaboration for inclusive growth and shared prosperity in the IR 4.0.
  2. BRICS Outreach programme was with African leaders and Outreach with Global South summit.
  3. It also called for Comprehensive Convention on International Terrorism (CCIT) by UNGA.
  4. Discussed on democratisation of UN, expansion of UNSC.
  5. Leaders stressed on the centrality of the rules based transparent, non-discriminatory, open and inclusive multilateral trading based on WTO.
  6. Help nations prepare for IR 4.0 **BRICS PartNIR** (Partnership on New Industrial Revolution). It should engage Private sector and Young innovators.
- **2019 11th Summit Brasilia**: Brasilia is the 1st city to hold its 2nd BRICS
1. Brazil is the current Chair of BRICS. President is Jair Bolsonaro.
2. **BRICS Bond Fund** in local currency is on the financial agenda of Brasilia meet.
3. Russia (like BRICS) rejects dictat and pressure, blackmail and threats, let alone the use of force without UNSC's decision.
4. BRICS is committed to **democratization of International life** and it's development under the **principles given in UN charter**, the principles of respect for cultural and civilizational diversity of world and the right of people to forge their destiny themselves.
5. BRICS is also becoming a **magnet for major Emerging economies**. Coz BRICS protects **multilateralism**, supports **transparent**, non-discriminatory, **open, free and inclusive International Trade** and rejects unilateral economic restrictions in developing International economic ties.
6. BRICS CRA = $ 100 bn to be a guarantor of the BRICS financial stability in case of crisis.

**G20 Osaka Summit, Japan (2019)**
1. BRICS in G20 Osaka summit indicated to protect multilateral trade system, role of WTO & IMF reforms.
2. It talks about Regional Groupings like: RIC (Russia-India-China); JIU (Japan-India-USA) and **BRICS** (Brazil-Russia-India-China-South Africa). This shows India’s rising power in the World.

**Achievements of BRICS**

- Because of financial crisis of 2008, BRICs started to cooperate. BRICS called for the reform of multilateral institutions. BRICS managed to push for international reform which led to **IMF Quota reform in 2010**.
- **BRICS New Development Bank**: 2014 Fortaleza Summit: See below
- They are developing a joint payments mechanism to reduce foreign trade settlements in US $.
- **BASIC** (BRICS without Russia) is an offshoot dealing with Climate Change.
- **India** is taking the lead role in **digital health, digital forensics, film technology, traditional medicine, sustainable water management, internships and fellowships**.
- Potential of Brazil's investments in space, defence, agri equipment, animal husbandry, post harvest technologies and biofuels.

**BRICS New Development Bank**

- Because of overdomination of USA and EU in IMF, BRICS in Fortaleza
summit came up with New Development Bank as an alternative to IMF and WB. Made by Fortaleza declaration in 2014. 1st time talked in Delhi (4th Summit) but established in Fortaleza. President – K V Kamath. Headquarter in Shanghai.

- The purpose of the Bank is to mobilise resources for infrastructure and sustainable development projects in BRICS and other emerging market economies and developing countries to complement the existing efforts of multilateral and regional financial institutions.
- NDB's Key area of Operation are clean Energy, Transport infra, irrigation, sustainable urban development and economic cooperation.
- The NDB functions on a consultative mechanism among the BRICS members with all the member countries possessing equal rights.
- Contingent Reserve Arrangement (CRA) signed in 2014 Fortaleza Declaration at 6th BRICS summit.
  1. The BRICS CRA aims to provide short-term liquidity support to the members through currency swaps to help mitigating BoP crisis situation and further strengthen financial stability.
  2. It has a corpus of US $ 100 billion. It will also contribute to strengthening global financial safety net and complement existing international arrangements (IMF).

Significance of BRICS

- India can collaborate on global issues like Terrorism, climate change, Energy security.
- India would need the support for its UNSC and NSG membership.
- NDB approved 1st set of loans which included US $ 250 million for India for Renewable Energy.
- BRICS gave 1 billion each to India, Brazil and South Africa.
- 1st time India talked about Traditional medicine systems in BRICS NDB meeting.

Challenges pertaining in BRICS

- BRICS combined population is 40% World but trade is just 15%.
- Dilution under G20.
- India - China issues.
- No formalization due to draft or Constitution.
- Global political turmoil. Various regions still have conflict potential. Arms control architecture is deliberately undermined with US withdrawal from

- **Structural imbalances** in the World Economy. Threats from unfair competition practices, sanctions, trade wars, abuse of US $ status as World reserve currency.
- **Terrorism** and **Climate Change**. Terrorism has caused loss of $1 trillion to World Economy.

**Way Forward**

- To become a true representative of Emerging economies, BRICS must **increase membership and expand its agenda** to climate change, development finance etc. **BRICS + and NextEleven (N – 11) = 11 countries poised to become the biggest economies in the World in 21st C after BRICS.** They are South Korea, Mexico, Bangladesh, Egypt, Indonesia, Iran, Nigeria, Pakistan, Phillipines, Turkey and Vietnam.
- It will be useful for BRICS to develop an **institutional research wing on the lines of OECD**, offering solutions relevant to the developing World.
- BRICS can consider on Climate Change and UN SDGs through setting up **BRICS Energy alliance** and Energy Policy.
- Idea of setting up a **BRICS Credit Rating Agency (BCRA)** as proposed by India (opposed to West Standard and Poor, Moody) can be on BRICS Future Agenda.

Source: AspireIAS Notes/ PIB
POCSO Act - Protection of Children from Sexual Offences Act

Legal provisions

- The Protection of Children from Sexual Offences (POCSO) Act was enacted in 2012 especially to protect children (aged less than 18) from sexual assault.
- Section 7 of the POCSO Act, inter alia, says that whoever with sexual intent touches the breast of the child is said to commit sexual assault.
- Whereas Section 8 of the Act provides minimum imprisonment of three years for sexual assault.
- Section 354 of the Indian Penal Code (IPC) lays down a minimum of one year imprisonment for outraging the modesty of a woman.

The POCSO Act, 2012

- Definitions:
  1. The Act defines a child as any person below eighteen years of age.
  2. It defines different forms of sexual abuse, including penetrative and non-penetrative assault, as well as sexual harassment and pornography.
  3. It deems a sexual assault to be “aggravated” under certain circumstances, such as when the abused child is mentally ill or when the abuse is committed by a person in a position of trust or authority like a family member, police officer, teacher, or doctor.
- The Protection of Children from Sexual Offences Act (POCSO Act) 2012 was formulated in order to effectively address sexual abuse and sexual exploitation of children.
- Role of police:
  1. The Act casts the police in the role of child protectors during the investigative process.
  2. Thus, the police personnel receiving a report of sexual abuse of a child are given the responsibility of making urgent arrangements for the care and protection of the child, such as obtaining emergency medical treatment for the child and placing the child in a shelter home, and bringing the matter in front of the Child Welfare Committee (CWC), should the need arise.
- Safeguards:
1. The Act further makes provisions for avoiding the re-victimisation of the child at the hands of the judicial system.
2. It provides for special courts that conduct the trial in-camera and without revealing the identity of the child, in a manner that is as child-friendly as possible.
3. Hence, the child may have a parent or other trusted person present at the time of testifying and can call for assistance from an interpreter, special educator, or other professional while giving evidence.

IPC and POCSO: Differences

- The definition of ‘assault or criminal force to woman with intent to outrage her modesty’ given in the IPC is generic whereas in POCSO, the acts of sexual assault are explicitly mentioned such as touching various private parts or doing any other act which involves physical contact without penetration.
- ‘Sexual assault’ in POCSO specifically excludes rape which requires penetration; otherwise the scope of ‘sexual assault’ under POCSO and ‘outraging modesty of a woman’ under the IPC is the same.
- Whereas the IPC provides punishment for the offence irrespective of any age of the victim, POCSO is specific for the protection of children.
- Higher punishment is provided under POCSO not because more ‘serious allegations’ of sexual assault are required but because the legislature wanted punishment to be more deterrent if the victims are children.
- Therefore, once the act of ‘outraging modesty with the use of assault or criminal force’, which is nothing but ‘sexual assault’, is proved, the requisite punishment must be slapped under POCSO if the victim is a child.

Important Judgements

- In Vishaka v. State of Rajasthan (1997), the Supreme Court held that the offence relating to modesty of woman cannot be treated as trivial.
- In Pappu v. State of Chhattisgarh (2015), the High Court of Chhattisgarh, though it acquitted the accused under Section 354 of the IPC as the offence was found lacking in use of ‘criminal force or assault’, convicted him for sexual harassment under Section 354A which requires ‘physical contact’ and advances as a necessary element.
  - This case also pertained to squeezing the limbs and breasts of a 13-year-old girl but the High Court did not venture into the area of skin-to-skin contact.

Global examples
It will not be out of place to mention here that the Sexual Offences Act 2003 of the U.K. says that touching (with sexual intent) includes touching with any part of the body, with anything else or through anything.

The POCSO (Amendment) Act, 2019

- The act aims at making offences against children gender-neutral.
- The definition of ‘Sexual Assault’ has been extended to incorporate administration of hormones or chemical substances to children to attain early sexual maturity for the purpose of penetrative sexual assault.
- The Act defines child pornography as any visual depiction of sexually explicit conduct involving a child including photograph, video, digital or computer generated image indistinguishable from an actual child.
- The amendments also penalize the transmitting of pornographic material to children and propose to synchronise it with the Information Technology Act.
- The Act seeks to enhance punishment for sexual offences against children, with a provision of death penalty.
- According to the amendment act, those committing penetrative sexual assaults on a child below 16 years of age would be punished with imprisonment up to 20 years, which might extend to life imprisonment as well as fine.
- In case of aggravated penetrative sexual assault, the act increases the minimum punishment from ten years to 20 years, and the maximum punishment to death penalty.
- To curb child pornography, the Act provides that those who use a child for pornographic purposes should be punished with imprisonment up to five years and fine.
- However, in the event of a second or subsequent conviction, the punishment would be up to seven years and fine.
- The government has also sanctioned over one thousand fast track courts for speedy disposal of pending cases under POCSO.

Child Pornography

- The new act defines child pornography as: “any visual depiction of sexually explicit conduct involving a child which includes a
photograph, video, digital or computer-generated image (that is) indistinguishable from an actual child.”

- Additionally, “an image created, adapted, modified” to depict a child would also be treated as child pornography. This would also include cartoons, animated pictures, etc.
- The Cabinet has also enhanced the fine for possessing child porn but not deleting or reporting it to 5,000 from the earlier proposal of Rs. 1,000. If a person stores such content for distributing it further, except for when presenting it in court as evidence, he could face a punishment of upto three years.
- Henceforth, there will be zero tolerance for child pornography.
- Some of these provisions were also contained in the Protection of Children from Sexual Offences (POCSO) Amendment Act, 2019, but lapsed.

Significance of POCSO Amendment Act 2019

- The amendment is expected to discourage the trend of child sexual abuse by acting as a deterrent due to strong penal provisions incorporated in the Act.
- It intends to protect the interest of vulnerable children in times of distress and ensures their safety and dignity.
- The amendment is aimed to establish clarity regarding the aspects of child abuse and punishment thereof.
- It is gender-neutral and thus looks into the sexual assault of both minor boys and girls.

Introduction of Death Penalty

- The bill seeks for the death penalty for aggravated sexual assault on children to create deterrent effect.
- It refers to the judgments of the Supreme Court in Machhi Singh (1983) and Devender Pal Singh (2002) in which the court had held that the death penalty can be awarded only in rarest of rare cases.

Concerns over death penalty

- Often, the perpetrators of abuse are family members and having such penalty may discourage the registration of the crime itself. Also, it may threaten the life of the minor as the maximum punishment for murder is also the death sentence.
The Justice J.S. Verma Committee, which was constituted in 2013 in the aftermath of the Nirbhaya case, after due deliberations found itself against the imposition of death penalty in rape cases. The 262nd Report of the Law Commission of India, 2015, also provides for abolition of the death penalty except in terror cases.

Other Concerns

- According to the National Crime Records Bureau (NCRB) data of 2016, the conviction rate in POCSO cases is 29.6% while pendency is as high as 89%. The prescribed time period of two months for trial in such cases is hardly complied with.
- As per the NCRB data of 2016, less than three per cent of child rape cases that came up before the courts ended in convictions.

Problems

- The introduction of the death penalty may backfire in cases of child sexual abuse and even have a catastrophic effect. Often, perpetrators of abuse are family members and having such penalties may discourage the registration of the crime itself.
- It may threaten the life of the minor as the maximum punishment for murder is also the death sentence.
- Justice J.S. Verma Committee was against the imposition of the death penalty in rape cases. The 262nd Report of the Law Commission of India also provides for the abolition of the death penalty except in terror cases.
- The death penalty diverts attention from the core issues of infrastructural apathy, procedural lapses and trial delays.
- It is the certainty of punishment rather than its severity which has deterrence in real sense.
- Even a year-and-a-half after the passage of the Criminal Law (Amendment) Bill, 2018, which introduced the death penalty for rape of a minor girl, such incidents have not been under check.
- Robin Conley in his book, Confronting the Death Penalty, has observed that the death penalty may seem just and appropriate in abstract but once analysed, it is less appealing practically.
- Deterrence has to be supplemented by exhaustive measures including an overhaul of the criminal justice administration.
- As per Supreme court data, 24,212 FIRs were filed across India this year. According to NCRB data of 2016, the conviction rate in POCSO cases is 29.6% while pendency is as high as 89%. The prescribed time period of two
months for trial in such cases is hardly complied with.
- Supreme court has recently directed the Central Government to set up special courts in each district having more than 100 pending cases under the Act.

**Way Forward**

- Problems related to implementation of POCSO Act such as lack of adequate special courts, lack of sensitization for investigators and prosecutors in dealing with child victims, poor rate of convictions etc. need to be resolved urgently.
- The Supreme Court direction to set up special courts within 60 days of the order in each district having more than 100 pending cases under the act must be complied with urgently.
- The provision of death penalty should be widely discussed and debated and should be used only for the rarest of the rare cases.
- Awareness and sensitization of people is equally important to prevent the crime itself.
- Massive awareness should be created among the masses about child’s dignity and about the law in place.
- POSCO Act needs to be part of school syllabus.
- Along with fast track courts, proper infrastructure and judges capacity should be looked upon.
- Need of ground level work.
- Speedy delivery of justice.
- Proper police training and a dedicated children cell at stations as that of a women cell.
- Need of accountability at each and every level.
- Many Indians men and women refuse to believe that sexual violence is a serious problem eating away at India’s vitals. It is essential to recognise that the crisis lies in the precise manner in which the existing criminal justice system unfolds.
- Instant medical relief and compensations should be provided to the victim.
- Children should be given a platform and proper environment to speak against such abuse.

**Dedicated special court by POCSO**

- The Supreme Court on Thursday directed the Centre to set up a dedicated special court in every district which has over 100 cases under Protection of Children from Sexual Offences (POCSO)
pending.

- The apex court gave this mandate with a deadline of 60 days, as it was concerned about the slow pace at which child sexual abuse cases are being dealt with.
- A bench of Chief Justice of India Ranjan Gogoi, Justice Deepak Gupta and Justice Aniruddha Bose made these statements when they learnt that 1.5 lakh POCSO cases were pending in 670 designated courts.
- Quoting available data, the court pointed out that only 3% victims in POCSO cases received compensation in 2015, and the number increased to only 4% and 5% in 2016 and 2017 respectively.
- Per this data, a judge on an average has to go decide on 224 cases. To address this, the apex court asked for the Centre to set up special courts, which should be funded by the Centre as well.

Guidelines by the SC for Setting up of special courts:

- Such courts will be funded by the central government. The fund will not only take care of the appointment of the presiding officer but also appointments of support persons, special public prosecutors, court staff and infrastructure, including creation of child friendly environment and vulnerable witness court rooms.
- Awareness: WCD ministry shall facilitate screening of “short clips intended to spread awareness of the subject in general, namely, prevention of child abuse and prosecution of crimes against children, in every movie hall and could also be transmitted by various television channels at regular intervals.”

Source: TH
**Definition**: It is the seasonal reversal in the wind direction. It is experienced in tropical areas (20°N to 20°S). In India, it is experienced in June, July, August and September.

5 Key players in Monsoon:

1) **Differential heating and cooling of land** (LP) and Sea (HP) in summer.

2) **Northward shifting of ITCZ** in July over Ganga plains.
ITCZ is a low pressure zone located at the equator where trade winds converge. This leads to the formation of thermal low over North and Northwest India. Southeast Trade winds from S hemisphere cross the Equator (40°E to 60°E of longitude) and turn right due to Coriolis force in the SW direction. It is also called as Monsoon trough during monsoon year. The location and shift of ITCZ governs the breaks and pulsating nature of Monsoons.

3) The presence of High Pressure (HP) area over Madagascar (20°S of Indian Ocean). The intensity and position of this HP area affects Indian monsoon.

4) Tibetan plateau gets intensely heated
This results in strong vertical air currents and the formation of High Pressure over the plateau @ about 9 km above sea surface.

This is Tropical Easterly Jetstream which is associated closely with the burst of monsoon.

Tropical Easterly Jetstream is also a major reason why there are no cyclones during Monsoon because the presence of an Easterly jet over the Indian landmass in the upper troposphere prevents vertical circulation of air...which is a pre-condition for formation of cyclones.

5) Northward shifting of Sub Tropical Westerly Jet Stream (STWJ) over North of Himalayas:

Jet Stream Theory: Origin of Monsoon

(Reason for the sudden burst of Monsoon)

- STWJ is a band of fast moving air from West to East usually found in mid-latitudes in the upper troposphere @ the height of 8-15km
- During Winter, STWJ shifts Southwards. It gets bifurcated coz of Himalayas and 1 branch blows South of Himalayas. There is a presence of HP belt over the Northwest India and Low Pressure
over Indian Ocean.
- Presence of STWJ south of Himalayas also induces HP belt in the upper troposphere. Consequently wind direction is from SE to NW.
- During summer, sun is in Northern Hemisphere, Northwest India is intensely heated. Therefore, LP belt is created over the surface of Northwest India.
- Indian Ocean is comparatively cooler and has a HP belt. Ideally, wind should blow from sea to land but there is still presence of STWJ to the South of Himalayas.
- HP belt over the upper troposphere prevents the upward movement of air from the surface LP and thus, the monsoon is not yet activated.
- By the start of June STWJ is moved to N of Himalayas and thus upper tropospheric HP is removed. This induces a rapid movement of wind from sea towards land, giving the sudden "burst" or "break" of monsoon.

6) The presence of Tropical Easterly Jetstream over peninsula in summer. It is associated closely with the burst of Monsoon.

- **Role of Tibetan Plateau**: It is the highest & largest plateau of the world w avg height of 4000 m and is surrounded by even higher mountain ranges.
- **In summer, Tibetan Plateau acts as a heat source.** Air above it is heated & is warmer compared to the surrounding air of mountain ranges. Warm air rises above and creates HP belt in the upper air above Tibetan plateau. Air spreads from HP belt and sinks over Indian Ocean around 30°S and 70°E.
- This movement from Tibet to IO is known as Tropical Easterly Jet (TEJ). This jet drives monsoonal winds towards Indian subcontinent and intensifies SW monsoon.
- The area over IO where TEJ sinks is known as Mascarene High.
- It is a major reason why there are no cyclones over the Indian landmass. It is present in the Upper troposphere & prevents d vertical circulation of air which is a pre-condition for formation of cyclone.

7) S-E trade winds from Southern hemisphere cross the equator and turn right due to coriolis force.

**El Nino/La Nina and the Indian Monsoon**
El-Nino is a complex weather system that appears once every 3-7 years, bringing drought, floods and other weather extremes to different parts of the world.
The system involves oceanic and atmospheric phenomena with the appearance of warm currents off the coast of Peru in the Eastern Pacific and affects weather in many places including India.

El-Nino is merely an extension of the warm equatorial current which gets replaced temporarily by cold Peruvian current or Humbolt current (locate these currents in your atlas).

This current increases the temperature of water on the Peruvian coast by 10°C. This results in:

1. distortion of equatorial atmospheric circulation;
2. irregularities in the evaporation of sea water;
3. reduction in the amount of planktons which further reduces the number of fish in the sea.

The word El-Nino means 'Child Christ' because this current appears around Christmas in December. December is a summer month in Peru (Southern Hemisphere). El-Nino is used in India for forecasting long range monsoon rainfall. In 1990-91, there was a wild El-Nino event and the onset of southwest monsoon was delayed over most parts of the country ranging from five to twelve days.

Retreating Southwest (SW) Monsoon Season (Oct, Nov): Retreat of Monsoon and onset of the NE Monsoon:
Unlike sudden burst of SW monsoon, retreat is gradual.
It starts retreating from North India by the 2nd week of Sep. By the end of Sep, SW monsoon becomes weak as the LP trough (ITCZ) of Ganga plain starts moving southwards in response to southwards in response march of the Sun.

The monsoon retreats from the Western Rajasthan by the 1st week of Sep. It withdraws from Rajasthan, Gujarat, Western Ganga plains and Central Highlands by the end of month.

By beginning of Oct, LP covers Northern Bay of Bengal and by early Nov, it moves over KN and TN. By mid Dec the ITCZ is completely removed from the Peninsula.

It is marked by clear skies and rise in temp. The land is still moist. Owing to the conditions of HT and humidity, the weather becomes rather oppressive. This is commonly known as ‘October Heat’. In the 2nd ½ f Oct, temp ? esp in NI.

Tropical depressions or Bay Cyclones in late monsoons:

Why is the retreating monsoon season dry in North India and rain in the Coromandal Coast in Oct & Nov?

It is associated w the passage of cyclonic depressions which
originate over Andaman Sea and manage to cross the Eastern coast of S peninsula. These tropical cyclones are very destructive.

- The thickly populated deltas of Godavari, Kaveri and Krishna are their preferred targets. Every year cyclone brings disaster here.
- A few cyclonic storms also strike the coast of WB, Bangladesh and Myanmar. Such cyclones are less frequent in Arabian Sea. Why?

**Why do the cyclones in Arabian Sea not affect India?**

- Tropical cyclones move from east to West.....they are secondary circulations and maintain the larger direction of the planetary winds (i.e Trade winds which blow from East to West).
- So, any cyclones to form in Arabian Sea are less likely to affect India.
- Also, another reason that can be given is that the findlater jet of the coast of Somalia causes coastal upwelling and hence cooling of waters in the western Indian ocean and cooler temperatures would not support the formation of tropical cyclones.
- However, please note that it would happen only if the Findlater Jet is very strong.

**What is the difference between Retreating Southwest Monsoon and Northeast Monsoon?**
### Mechanism of Monsoon

It can be understood in 4 different points:

1) **Onset and Landward advance of Monsoon from Kerala:**
   - Differential heating of land (LP) and sea (HP) in summer.
   - Northward shift of ITCZ.
   - Northward shifting of STWJ.
   - Heating of Tibetan plateau and inducement of TEJ.

2) **Rain bearing systems:**
   - Monsoon rainfall enters in India thr’ 2 branches, Arabian Sea branch of SW Monsoon brings rain to W coast and further interiors of Peninsula (It is related to offshore meteorological conditions along eastern coast of Africa) and BoB Bengal branch gives rainfall over Eastern, NE and NI. Tropical depressions originating in BoB cause rainfall in Northern plains.
   - **Arabian Sea Branch of SW Monsoon:** The total volume is 3 times more than BoB branch. It approaches Southwest coast of India by the 1st week of June. They further split into 3 branches:
     1. **Western Ghats (WG):**
The high WG leads the moist air to rise quite high. Heavy rain (200-250 cms) falls on the windward slopes of WG. The leeward side receives only 60 cm rainfall & rain shadow areas receive much less. The winds progressively deposit less rainfall from W to E Ex. Mumbai-200 cm & Chennai-40 cm and from S to N Ex. Thiruvan-puram-325 cm, GA-300 cm & Mumbai-200 cm. The intensity of rainfall over the west coast of India is related to 2 factors: The offshore meteorological conditions and The position of equatorial jet stream along the eastern coast of Africa.

2. **North of Mumbai**: After crossing the Ghats the monsoon winds cross the plateau & reach MP, JH and OD giving rainfall. Part of this wind enters through Narmada valley & causes good rainfall in the Chota Nagpur plateau. Further North, a part of these winds passes over West and Southeast Rajasthan without depositing much rainfall and goes straight to the sub-Himalayan region giving rainfall to the foothills of the W Himalayas, eastern PN, HR and NE RJ where it meets the BoB branch.

3. **Saurashtra Peninsula and Kachch**: Aravallis runs almost parallel to the direction of this branch and do not form a barrier to intercept the winds, and hence do not receive much rainfall from this branch.

- **Bay of Bengal branch of SW Monsoon:**
  1. These winds pass over Ganga and Brahmaputra delta strike against Shiwalik ranges, Himalayas, Chittagong and Assam hills; then tise and cause heavy rainfall in WB, SK, AR and southern slopes of Khasi-Jaintia hills. Cherrapunji (1250 cm) receives the highest rainfall in the World.
  2. 1 branch of BoB branch is deflected in Western direction, blowing from SE, between Himalayas and Peninsula. The winds move up in the Indo gangetic plain parallel to Himalayas.
  3. The rainfall decreases up to Kashmir from Ganga plains (250 cm). A small amount of ppt is received on the E Aravalli slopes as they form a barrier, but Thar on the West side lies in the rain shadow for the SW monsoon BoB branch and receives little or no rainfall.
  4. During monsoon, strong winds and wet spells last for a few days followed by a period of weak winds or monsoon lull. This leads to dry spells between two wet spells.
  5. The normal duration of monsoon in most parts of India is 100 days to 120 days but in RJ it is 45-50 days, while it is max of 6 months in Kerala. Temp are < in d wet season due to cloudiness & rainfall.
Why Tamil Nadu dry during this season?

- TN coast is parallel to BoB branch of SW monsoon.
- It lies in the rain shadow region of Arabian Sea branch of SW Monsoon.

3) Break in the Monsoon:

- **During SW monsoon**, if rain fails to occur for 1 or more weeks, it is known as break in the monsoon. These breaks are quite common during rainy season. The location and shift of ITCZ governs the breaks and pulsating nature of Monsoons. These breaks in diff regions are due to different reasons:
  1. In NI, rains are likely to fail if the rain-bearing storms are not very frequent along monsoon trough or the ITCZ over this region.
  2. Over the W coast, the dry spells are associated with the days when winds blow parallel to the coast.
  3. Dry spells occur over Western RJ due to thermal conditions in the lower atmosphere, such as Inversion of temp.
  4. Cyclonic originating head of BoB and their crossing into the mainland may result in BoB branch of SW monsoon winds getting drawn into cyclonic depression resulting in dry spells in SE parts of Ganga plains.

- **Position of ITCZ over Northern plain**, called as monsoon trough determines tracks of tropical depressions. As the axis of monsoon trough oscillates, the tracks of these depressions also vary. This cause wide fluctuation in the direction and path these depressions take intensity of rainfall a.w.a variations in the amount of rainfall from year to year. If the trough lies close to Himalayas. It causes heavy rainfall in the foothills which results in widespread floods and prolonged dry spells in the plains. If the LP trough lies over Ganga plain, it results in heavy rains in the plains and dry spells in the foothills.

4) Retreat of Monsoon and onset of the NE Monsoon.

Completed above.

What are the characteristics of Monsoonal Rainfall?
Rainfalls received from southwest monsoon is seasonal in character. June - Sep.
Governed by Relief or Topography.
Monsoon rainfall decreases from the increasing distance from the sea.
Monsoon rains occur in wet spells of few days. Then Breaks related to cyclonic disturbances over BoB and their crossing into mainland.
Heavy downpour leads to runoff and soil erosion.
75% of the total rain received during SW monsoon. Agri dependent on it.
Uneven spatial distribution.
Rain sometimes end considerably earlier than usual causing great damage to standing crops and making the sowing of winter crops difficult.

Source: NCERT and Aspire IAS Notes

Non Banking Financial Companies

About NBFCs

- NBFCs are Companies registered under Companies Act, 1956 engaged in giving loans; acquisition of shares, stocks, bonds, debentures & securities issued by Govt or local authorities; leasing higher purchase insurance, chit fund business.
- It holds 12.3% assets in Financial systems. It does not include any institution whose principle business is Agriculture, Industry, buying or selling of goods other than security or providing any services and sale and purchase constitution of immovable properties.
- A Non banking institution which is a Company and can receive deposit in any scheme also comes under NBFCs (Deposit taking NBFCs) aka Residuary Non Banking Company.
- It is engaged in acquisition of stocks/bonds/debentures.
- It does not include those entity whose principle business is that of Agriculture, Industrial activity, Purchase or sale of any goods (other than securities) or services and sale/purchase/construction of immovable property.
- They are not a part of Payment and Settlement System.
- Both NBFC and Banks can issue Demand Draft and has Deposit
insurance. **NBFCs cant issue Cheque book.** NBFC cannot accept Demand deposits.

- They cannot issue cheques drawn on itself. Deposit insurance facility of DICGC is not available to depositors of NBFCs.
- After IL&FS case, **Forensic auditing is now mandatory.** As per RBI, **service providers** need to maintain the same high standard of **cadre** in performing services as it is expected by RBI. These NBFCs **can also** maintain SLR.

**RBI introduced Liquidity Management Framework for NBFCs**

- All **non deposit taking NBFCs with asset size of >= 10000 crore** and all **deposit taking NBFCs** have to maintain a liquidity buffer in terms of **Liquid...** of **Liquidity Coverage Ratio (LCR).** LCR is for short term obligations.
- LCR requirement will be binding on NBFCs from 1st December, 2020 with the minimum High Quality Liquid Assets (HQLAs) to be held being 50% of the LCR, progressively reaching up to the level of 100% by 1st December, 2024.
- Assets to be included as HQLA include **cash, government securities and marketable securities issued or guaranteed by foreign sovereigns.** These assets should be free of any financial liability.

**Banks get more headroom for lending to NBFC's**

- Why? To **increase credit flow to NBFC sector** because of liquidity crunch faced by NBFCs.
- **RBI raises cap on Bank's exposure** to a single **NBFC to 20% of Tier I capital** from 15%.
- Banks have been allowed to lend to the NBFCs for on-lending to the **agriculture sector up to ?10 lakh, up to ?20 lakh to micro and small enterprises,** and for **housing, up to ?20 lakh per borrower.** These will be classified as **priority sector lending.**
- **Mutual fund and insurance companies are also creditors to stressed NBFCs.** IRDAI has taken a decision to enable the insurance companies to be a part of the inter-creditor agreement.
- To encourage banks to extend loans to retail consumer segments like vehicle loans and personal loans, RBI has decided to lower the risk weight from 125% to 100%.

**RBI has asked the NBFCs with an asset size of > Rs 5,000 crore to appoint Credit Risk Officer (CRO)**
The role of CRO will be identification, measurement and mitigation of risks and all credit products (retail or wholesale) shall be vetted by the CRO from the angle of inherent and control risks. The CRO is required to function independently. The troubled NBFC sector is facing difficulties like credit squeeze, overleveraging, excessive concentration, massive mismatch between assets and liabilities and misadventures by some large entities like the IL&FS group.

RBI has announced the extension of the Ombudsman Scheme for NBFCs

- It was launched in 2018 for redressal of complaints against NBFCs registered with RBI and covered all deposit accepting NBFCs. Now it is extended to all eligible non-deposit taking NBFC having an asset size of >= Rs 100 crore with customer interface.
- There is also an appellate mechanism against the decision of Ombudsman.
- It still excludes various NBFC groups such as Infrastructure Finance Companies (NBFC-IFC), Core Investment Company (CIC), Infrastructure Debt Fund-Non-Banking Financial Company (IDF-NBFC) and also NBFCs under liquidation.

Other efforts for NBFCs

- RBI to create Specialised Supervisory and Regulatory cadre for Commercial Banks, Urban Cooperative Banks and NBFCs.
- RBI directs NBFCs with asset size > 5000 crore to appoint Chief Risk Officer.
- Housing Finance Companies to be treated as NBFCs. RBI is the new regulatory body for housing finance.
- Harmonization of NBFC categories: RBI has decided to merge 3 categories of NBFCs into a single category to provide greater operational flexibility to non-banking lenders. NBFCs categorized as Asset Finance Companies (AFC), Loan Companies (LCs) and Investment Companies (ICs), will be merged into a new category called NBFC - Investment and Credit Company (NBFC-ICC).
- Chit Funds: They are regulated under Chit Funds Act, 1982. They regulated by RBI as they come under NBFC.
- Core Investment Companies
  1. They are specialized NBFCs. It has an asset size of Rs. 100 crore.
  2. Main business is Acquisition of shares and securities with certain
conditions like: These should not hold < 90% of its net assets in the form of investment in equity shares, preference shares, bonds, debentures, debt or loans in a group company.

What is the news?

- The Reserve Bank of India (RBI) has issued norms for **NBFC dividend distribution** to infuse greater transparency in the practice.
- The norms will be effective for dividend declaration from the profit for the financial year ending March 31, 2022.
- One of the criteria is the **net NPA ratio must be lower than 6% in each of the last three years**.
- No specific ceiling on payout has been set for NBFCs not taking public funds and not having customer interface.
- The maximum payout ratio for core investment firms would be 60%, standalone primary dealers 60% and other NBFCs 50%.
- The board of directors, while considering the proposals for dividend, will take into account supervisory findings of the Reserve Bank (National Housing Bank (NHB) for HFCs) on divergence in classification and provisioning for non-performing assets (NPAs), qualifications in the auditors’ report to the financial statements; and long-term growth plans of the NBFC.
- The NBFCs will need to comply with the minimum prudential requirements to be eligible to announce dividend.

Source: TH

**Insolvency and Bankruptcy Act, 2016**

**GS-III | 25 June, 2021**

It deals with debt default of **companies and limited liability entities, partnership firms and individuals**.

- It was based on **T K Vishwanathan Committee** on Bankruptcy Law Reforms Committee (BLRC) in 2014.
- It proposes a framework to ensure early detection of stress in a business,
initiation of the insolvency resolution process by debtor, financial creditor or operational creditor; liquidation of unviable business and abiding destruction of value of failed business.

- **Why there was a need?**
  - Rising amount of NPAs and stressed assets.
  - Multiplicity of the laws to deal with insolvency including Archaic laws like SARFAESI, Companies Act, Recovery of Debts due to Banks and FI Act, 1993, Provincial Insolvency Act, 1920 etc.
  - The legal and Institutional machinery for dealing with debt not in line with global standards.
  - All this hampered the confidence of creditor. The debt access for borrowers get diminished.

- **Objective of the IBC, 2016**
  - Promote Entrepreneurship
  - Availability of the credit
  - Balance the interests of all stakeholders.
  - Maximization of the values of assets
  - Greater clarity in law.

- **NCLT, 2013**
  1. It is a successor body to the Company Law Board.
  2. It is based on Justice Erandi Committee wrt Insolvency and winding up of companies.
  3. It is a quasi judicial body set up to govern the companies established under Companies Act, 2013.

- **Powers**
  1. Mismanagement and Oppression (erstwhile CLB)
  2. Revival of Sick companies (BIFR)
  3. Winding up of Companies (HCs)
  4. Once NCLT admits the case for insolvency process under IBC, 2016 the case cannot be withdrawn even if the payment decide to settle. But SC using Art 142 (extraordinary © provisions) allowed it.

- **The Code separates commercial aspects of the insolvency proceedings from judicial aspects.**
  1. IPs will deal with commercial aspects such as affairs of corporate debtor, committee of creditors.
  2. Judicial issues will be handled by proposed Adjudicating Authorities (NCLT/DRT).
  3. ‘Information Utility’ is created which would store financial information in electronic databases.

- Insolvency and Bankruptcy Board of India (IBBI) is set up.
  1. IBBI is a unique regulator i.e. It regulates both professions and transactions.
2. It has regulatory oversight over Insolvency Professionals (IPs), IP Agencies (IPA) and Information Utilities (IU).
3. It writes and enforces rules of corporate insolvency, corporate liquidation, individual insolvency and individual bankruptcy under IBC.
4. IBBI is responsible to implement the IBC and amend laws for insolvency resolution of Corporate persons, partnership firms and individuals in a time bound manner for maximization of valuation of assets of such person.
5. To promote entrepreneurship, credit availability and balancing the interest of all stakeholders.
6. So far, IBBI has produced 3 sets of regulations: IPs; IPA and bye laws and Governing board for IPAs.

- The Code also provides a fast track insolvency resolution process for corporates and LLPs. This will be an enabler for start-ups and SMEs to complete the resolution process in 90 days (extendable to 45 days in deserving cases).
- The Code also addresses the cross border insolvency with a detailed framework soon.
- When a corporate entity defaults on its debt, control shifts from shareholders/promoters to Committee of Creditors (CoC). CoC have 180 days to evaluate the case (90 days extendable).
- IBC has amended India's Corporate insolvency resolution process. Prior to the approval of resolution plan, the antecedants, credit worthiness and credibility of resolution applicants including Promoter are considered by Committee of Creditors.
- IBC empowers operational creditors (workmen, suppliers etc.) also to initiate the insolvency proceedings upon non-payment of dues.
- During waterfall (liquidation), Financial debts owed to unsecured creditors have been kept above the Government’s dues.
- Recently India amended IBC and prohibited near relatives, their CA, Promoters in Bidding process during Insolvency.
- Even RBI allowed ECB for re bidding under IBC.
- RBI allowed faulty organizations to bid for their subsidiary organization if they pay interest over loan in which default is taken place.
- IBC was spearheaded by MoF but now from 2016, the administration is transferred to Mo Corporate Affairs.
- IBC Amendment, 2019 =
  1. Time bound resolution, voting rules for financial creditors
  3. 330 days deadline, Creditors who voted against majority can receive minimum liquidation value, Resolution plan to be binding on all.
Tuberculosis (TB)

What is Tuberculosis? How is it caused?

- TB is caused by bacteria (Mycobacterium tuberculosis) that most often affect the lungs but not just lungs but also other parts. BCG Vaccine. 90:90:90 target for 2035 for TB. Moscow declaration to end TB.
- TB is a contagious infection that usually attacks your lungs.
- It can spread to other parts of your body, like your brain and spine.
- Bacteria called Mycobacterium tuberculosis causes it.
- TB is the top infectious killer in the world claiming 4000 lives a day
- India has the largest number of TB patients. and largest deaths due to TB. BCG Vaccine is given for TB.

Transmission:

- TB is spread from person to person through the air.
- When people with lung TB cough, sneeze or spit, they propel the TB germs into the air.
- WHO said the spread of TB is due to 1) Low Immunity 2) High density and Closed space. 3) No health and hygiene (spitting).

Efforts of Indian Government to eradicate TB

- In 1962, the National TB Programme (NTP) was launched in the form of District TB Centre model, with Bacillus Calmette–Guérin (BCG) vaccination. Although BCG immunisation does prevent severe multi-organ TB disease in young children, it does not control TB.
- In 1978, the Expanded Programme on Immunisation (EPI) began, giving BCG to all babies soon after birth and achieving more than 90% coverage. However, the NTP and the EPI had not reduced India’s TB burden.
In 1993, the Revised National TB Control Programme (RNTCP) was launched, offering free diagnosis and treatment for patients rescuing them from otherwise sure death. It brought down TB incidence in India at an annual rate of 1.7%.

- **RNTCP, 1993**
  1. DOTS (Directly Observed Treatment Short course): Daily medicine. Hence Simple DOTS, Alternative DOTS and DOTS +.
  2. 1 problem is MDR - TB. Hence we are targeting through RNTCP.
  3. We change the testing methods = Serum to Sputum to Expert Gene Technology.
  4. **NIKSHAY Poshan Abhiyan** = 500 Rs. per month to TB patients. It is under NHM as a DBT scheme.
  5. Public and Private Doctors to add cases in NIKSHAY portal.
  7. Role modelling through Amitabh Bacchan.
  8. For AIDS, TB is an opportunistic disease.
  9. Red Ribbon Express is a Train for awareness.

- **National Strategic Plan for TB Elimination 2017-2025**
  1. 4 strategic pillars of “Detect – Treat – Prevent – Build” (DTPB).
  2. Key targets: TB-HIV, Diabetes, Tobacco use, Alcohol; Poor undernourished, EWS, Prison inmates etc.
  3. Early diagnosis of all the TB patients, prompt treatment with quality assured drugs and treatment regimens along with suitable patient support systems to promote adherence.
  4. Engaging with the patients seeking care in the private sector.
  5. Prevention strategies including active case finding and contact tracing in high risk / vulnerable population.
  6. Airborne infection control.
  7. Multi-sectoral response for addressing social determinants.

- In 2018, India has pledged to eradicate TB by the year 2025, 5 years ahead of the global deadline set for 2030.

- The Ministry of Health and Family Welfare has launched a National Prevalence Survey to estimate prevalence of tuberculosis at national and sub-national levels.

- **Truenat - a molecular TB Diagnostic Test**: is made indigenously in India by Goa based Molbio Diagnostics. ICMR has assessed and validated the diagnostic tool. WHO says it has high accuracy. Truenat can be used as an initial tool for diagnosing TB at primary, community health centers.

- **New cure for TB**: US Food and Drugs administration approves it. BPal Regime = Bedaquiline, Pretomanid and Linezolid.

- Combination therapy using Malaria drug (Chloroquin + Isoniazid) quickly clears TB.
India has the target to eliminate TB by 2025. World target is 2030. MoHFW launched ‘TB Harega Desh Jeetega Campaign’, along with National TB Prevalence Survey. Saharia tribe miners in Madhya Pradesh have appealed to the government to treat them for silicosis rather than Tuberculosis. They speak the Munda language.

WHO released Global TB Report 2019
1. Geographically, most TB cases in 2018 were in the WHO regions of South-East Asia (44%), Africa (24%) and the Western Pacific (18%).
2. 8 countries accounted for 2/3rd of global total include India (27%), China (9%) and Indonesia (8%).

India has announced a contribution of $22 million to the Global Fund for AIDS, TB and Malaria (GFTAM) for the 6th replenishment cycle (2020-22).

Kerala on track to eliminate TB by 2025
1. Joint Monitoring Mission (JMM 2019) by Center and WHO is assessing the RNTCP (Revised National Tuberculosis Control Programme) and India’s National Strategic Plan for TB elimination, 2017-2025.
2. Kerala lauded for
   1. Commitment, Implementation and Administration.
   2. Integrating RNTCP into health system.
   3. Patient centric programme, involvement of Community, leadership of local bodies.
3. They can improve on CBNAAT/Genexpert machines which are molecular diagnostics services.

Smokers are twice likely to develop active TB and die from it than non smokers and smoking also makes TB Treatment less effective. In 2018, 9 lakh TB cases were attributed to smoking, according to Global TB report. Tobacco control is TB control. World Lung Conference is held in Hyderabad.

SeeTB: is a new diagnostic tool for detecting TB. It is a battery operated device.

India and the World Bank have signed a loan agreement of $400 million for the Program Towards Elimination of Tuberculosis (TB).

Lancet has published a report ‘Building a Tuberculosis-free World’. Lancet is a British journal. It is among the World's oldest, most prestigious medical journal.

Dangers of TB transmission during CoVID

- India has the highest burden of tuberculosis (TB) in the world.
- Even as the government was pushing to end TB by 2025, the COVID-19 pandemic has caused a massive disruption in TB services.
- TB case notifications across India have dropped by over 50% since...
March, with an estimated 3,00,000 missed case notifications (until May 30).

- This is worrisome, since **undiagnosed TB can worsen patient outcomes** and increase transmission in the community.
- As the **lockdown ends**, we will see a **big surge in people seeking care with TB and COVID-19 symptoms**.
- However, people will struggle to get care because the **public sector is still dealing** with the pandemic, while the **private sector is not functioning at normal capacity** or is **reluctant to manage people with fever and cough**.
- To find the missed TB patients, we will need to find ways to **rapidly resume public TB services**, integrate TB and Covid-19 testing and be creative about engaging the private health sector to augment public TB services.
- It is critical for the **National TB Elimination Programme** to resume routine TB services, which include diagnostic services, such as microscopy and rapid molecular testing, as well as drug-susceptibility testing.

**Dual testing**

- Since fever and cough are symptoms of both TB and COVID-19, simultaneous **screening and testing** can be encouraged. Thankfully, India has access to **three existing technologies that permit dual testing** for both infections.
- The first is the **digital chest x-ray (CXR)**, which could be deployed along with artificial intelligence (AI) based tools for both TB and COVID-19.
- AI-based algorithms are now available that obviate the need for trained radiologists to read the x-rays. If a CXR is suggestive for TB on the AI algorithm, then a confirmatory test such as **GeneXpert** can be done to confirm TB and also detect drug-resistance.
- One such AI-enabled **screening tool is called qXR**, developed by Qure.ai, an Indian company. Several studies show accuracy that is comparable or better than human radiologists.
- **The screening tool**, qXR, has now added the capability of **detecting signs of COVID-19** from the x-rays images.
- Based on an estimated **3,00,000 missed cases** during the national lockdown, around **10,50,000 CXR** (assuming 70% of these are pulmonary TB cases and 5 CXRs are needed to detect one patient with pulmonary TB) **will be required for detecting TB cases**.
- This is an overwhelming figure for any health system especially during a pandemic. However, a **dynamic partnership with 80,000 licensed**
diagnostic radiology facilities will help combat this.

- CXR screening will require confirmatory testing for both diseases, and **molecular testing** is the most accurate and rapid option. There are two technologies already in use in India that could be leveraged for simultaneous testing of **sputum samples** for both infections.
- One is called **GeneXpert**. India has over 1,100 of these systems in use. A large number of private labs, too, have this technology. On this platform, TB can be detected using a **cartridge** called **Xpert MTB/RIF** and COVID-19 by using the **Xpress SARS-CoV2 cartridge**.
- The second molecular platform is called **TrueLab**, developed by an **Indian company – Molbio Diagnostics**.
- This technology is already being used in some states and in private labs to test for TB using a chip called **Truenat MTB**.
- Molbio now has a chip called **Truenat Beta CoV** that can be **used for COVID-19**. This chip, along with Xpress **SARS-CoV2 cartridge**, has been approved by ICMR for emergency use for COVID-19 testing.
- Typically, TB testing requires sputum sample. Now, SARS-CoV-2 testing is done using nasopharyngeal swabs, but there is no reason why sputum samples cannot be used, since sputum is generated deeper in the lungs. However, it is important to validate both test molecular platforms for simultaneous testing using the same sputum sample.

For critical analysis on Tuberculosis: [click here](#)

---

Source: PIB
Pakistan to remain on FATF greylist

- Pakistan was retained on the greylist, or the list of countries under “increased monitoring”, by the Financial Action Task Force (FATF), as the Paris-based UN watchdog judged it deficient in prosecuting the top leadership of UN Security Council-designated terror groups, including Lashkar-e-Taiba, Jaish-e Mohammad, Al Qaeda and Taliban.
- In addition, the FATF handed down another six-point list of tasks, mainly on money laundering actions.

What is FATF?

- The Financial Action Task Force (FATF) is the global money laundering and terrorist financing watchdog.
- The inter-governmental body sets international standards that aim to prevent these illegal activities and the harm they cause to society.
- As a policy-making body, the FATF works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas.
- With more than 200 countries and jurisdictions committed to implementing them.
- The FATF has developed the FATF Recommendations, or FATF Standards, which ensure a co-ordinated global response to prevent organised crime, corruption and terrorism.
- They help authorities go after the money of criminals dealing in illegal drugs, human trafficking and other crimes. The FATF also works to stop funding for weapons of mass destruction.
- The FATF reviews money laundering and terrorist financing techniques and continuously strengthens its standards to address new risks, such as the regulation of virtual assets, which have spread as cryptocurrencies gain popularity.
- The FATF monitors countries to ensure they implement the FATF Standards fully and effectively, and holds countries to account that do not comply.

Functions of FATF

- The Financial Action Task Force (FATF) was established in July 1989 by a
Group of Seven (G-7) Summit in Paris, initially to examine and develop measures to combat money laundering.

- In October 2001, the FATF expanded its mandate to incorporate efforts to combat terrorist financing, in addition to money laundering.
- In April 2012, it added efforts to counter the financing of proliferation of weapons of mass destruction.
- Since its inception, the FATF has operated under a fixed life-span, requiring a specific decision by its Ministers to continue. Three decades after its creation, in April 2019, FATF Ministers adopted a new, open-ended mandate for the FATF.

Objectives of FATF

- The objectives of the FATF are to set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system.
- FATF monitors countries' progress in implementing the FATF Recommendations; reviews money laundering and terrorist financing techniques and counter-measures; and promotes the adoption and implementation of the FATF Recommendations globally.

UN Security Council Resolutions 1267 and 1373

- The UNSC resolution 1267 was adopted unanimously on October 15, 1999.
- It is a consolidated list of people and entities that UN has determined as being associated with Al Qaeda or the Taliban, and laws which must be passed within each member nation to implement the sanctions.
- The UNSC Resolution 1373 was adopted on 28th September, 2001.
- It declares international terrorism a threat to international peace and security and imposes binding obligations on all UN member states.

Source: TH
The facility for genome sequencing to identify new variants of SARS-CoV-2 has been started at Sawai Man Singh Government Medical College here, making Rajasthan the first State in the country to have such a provision for complete sequencing at the State level.

The facility had been made available in the State at a cost of ₹1 crore for getting information about new variants of the virus. The samples from the State were so far being sent to the Institute of Genomics and Integrative Biology’s laboratory in New Delhi.

**Genes**

- Gene is a sequence of DNA or RNA that codes for a molecule that has a function.
- They are made of DNA and is a subdivision of DNA. They are packed in Chromosomes.
- Genes contain the bio-information that defines any individual.
- Physical attributes like height, skin or hair colour, more subtle features and even behavioural traits can be attributed to information encoded in the genetic material.

**A genome is the DNA or sequence of genes in a cell.**

- Human genome is made up of 23 chromosome pairs with a total of about 3 billion DNA base pairs.
- Most of the DNA is in the nucleus in the form of chromosomes and the rest is in Mitochondria (cell’s powerhouse). Genes make amino acids and proteins.
Sequencing a genome means deciphering the exact order of base pairs in an individual. Exome is a portion of the gene responsible for making Proteins. There are 24 distinct human chromosomes:

1. 22 autosomal chromosomes, plus the sex-determining X and Y chromosomes.
2. Chromosomes 1-22 are numbered roughly in order of decreasing size.
3. Somatic cells usually have one copy of chromosomes 1-22 from each parent, plus an X chromosome from the mother and either an X or Y chromosome from the father, for a total of 46.

There are estimated 20,000-25,000 human protein-coding genes.

Genome sequencing

1. It determines the unique genetic traits, susceptibility (and resilience) to disease.
2. Now the youth will be told if they carry gene that makes them less responsive to certain types of medicines. Example, A certain gene make some people less responsive to Clopidogrel, a key drug to prevent strokes and heart attacks.
3. Genome sequencing is figuring out the order of DNA nucleotides, or bases, in a genome—the order of Adenine, Cytosine, Guanines, and Thymine that make up an organism's DNA.

Importance of Genome Sequencing

- Sequencing the genome is an important step towards understanding how genes works. Genes account for <25% of DNA in the genome. Studying entire genome sequence will help scientists study parts of genome outside the genes.
- It will represent a valuable shortcut, helping scientists find genes much more easily and quickly.
- A genome sequence does contain some clues about where genes are, even though scientists are just learning to interpret these clues.
- Genome sequencing of wild varieties of plants can be used to identify disease resistance and drought tolerance genes in various plants and develop new varieties of crop plants in lesser time.
- Genome sequencing of crop plants can be helpful in deciphering and understanding the host-pathogen realationship in crops.

Why Genome sequencing?

- Ever since the human genome was first sequenced in 2003, it opened a fresh perspective on the link between disease and the unique genetic make-up of each individual.
- Nearly 10,000 diseases — including cystic fibrosis, thalassemia — are known to be the result of a single gene malfunctioning.
- While genes may render some insensitive to certain drugs, genome sequencing has shown that cancer too can be understood from the viewpoint of genetics, rather than being seen as a disease of certain organs.

Human Genome Project

- The Human Genome Project was started in 1990, a 13 year long international research effort to determine the sequence of the human genome and identify the genes that it contains.
- The Project was coordinated by the National Institutes of Health and the U.S. Department of
Energy.

Not only did the completion of this project usher in a new era in medicine i.e. personalized medicine, but it also led to significant advances in the types of technology used to sequence DNA.

IndiGen initiative

• It is a programme for the Mapping of entire genome. CSIR will undertake genome sequencing of a sample of nearly 1000 Indian rural youth to determine unique genetic traits, susceptibility (and resilience) to disease. It is 1st of a kind initiative.
• It is managed by CSIR-Institute of Genomics and Integrative Biology (IGIB) and CSIR – Center for Cellular and Molecular Biology (CCMB).
• The aim is 2 fold:
  1. If it is possible to rapidly and reliably scan several genomes.
  2. Advice people on health risks in their gene i.e. disease detection.

Advantages

1. It is important for Precision medicine and Personalised medicine.
2. It will sequence a gene which hides the information of susceptibility to attain a disease.
3. Cancer, Heart strokes etc.
4. Understanding gene functioning.

Disadvantages

1. Not everyone who signs up will be guaranteed a scan.
2. It can breach ethical standards fixed in the development of Pluripotent stem cells.
3. It can also cause personalized biological attacks by anyone who has your gene sequence.
4. Breach of Right to Privacy.
5. The project is an adjunct to a much larger government-led programme Genome India Project, still in the works, to sequence at least 10,000 Indian genomes.
6. Under IndiGen, CSIR drafted 1000 youth from college through camps and educating attendees on genomics and the role of genes in disease. Those 1000 youth will get a Card and access to an app.

Department of Biotechnology under MoS&T has cleared the Genome India Project

• It is a gene-mapping project involving 20 leading institutions including IISc and IITs.
• The first stage of the project will look at samples of 10,000 persons from all over the country to form a grid that will enable the development of a reference genome.

Source: TH

U.P. ranked best under Smart Cities Mission

GS-II | 26 June, 2021
U.P. ranked best under Smart Cities Mission

- Uttar Pradesh was ranked the best State, and Indore and Surat were jointly named the best cities by the Housing and Urban Affairs Ministry for their work under the Smart Cities Mission.
- Ministry announced that Uttar Pradesh had been ranked one, Madhya Pradesh was second and Tamil Nadu third in the India Smart Cities Awards 2020.

Smart City Mission

- **Objective**: To promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of Smart Solutions.
- **Focus**: On sustainable and inclusive development and to look at compact areas, create a replicable model which will act like a lighthouse to other aspiring cities.
- **Strategy**:
  1. Pan-city initiative in which at least one Smart Solution is applied city-wide.
  2. Develop areas step-by-step with the help of these three models:
  3. Retrofitting.
  4. Redevelopment.
  5. Greenfield.

- **Coverage and Duration**: The Mission covers 100 cities for the duration of five years starting from the financial year (FY) 2015-16 to 2019-20.
- **Funding**: It is a Centrally Sponsored Scheme.

Source: TH
India has assumed the Chairmanship of the Governing Body of International Labour Organization after a gap of 35 years.

During India’s Chairmanship, the sessions of the Governing Body held in October 2020 and March 2021 and the 109th session of the International Labour Conference held in June 2021 were conducted through virtual mode.

All new and innovative procedures for conducting these meetings were developed during his tenure.

Shri Apurva Chandra chaired both the Governing Body sessions, one virtually and the other in person at Geneva.

About ILO

- It was one of the 1st organizations to deal with labour issues. ILO was established in 1919 as an agency of League of Nations following the Treaty of Versailles (after WW1).
- It is the only tripartite U.N. agency. It brings together governments, employers and workers of 187 member States, to set labour standards, develop policies and devise programmes.
- Its Headquarter is in Geneva, Switzerland.
- Structure of ILO
  1. International Labour Conference: It sets the International labour standards and the broad policies of the ILO.
  2. Governing body: It is the executive council of the ILO. It takes policy decisions of ILO.
  3. International Labour Office: It is the permanent secretariat of the ILO.
- Functions of ILO: Solve labour issues, create policies, programmes, standards and recommendations; Human rights protection (Right to work, association etc); Research and Publication.
- ILO does not impose sanctions on Govt though it registers complaints against entities.
- India is the founding member since 1922. In India, the first ILO Office was started in 1928.
- India has ratified 6 out of 8 core ILO Conventions.
  1. Forced Labour Convention (No. 29)
  2. Abolition of Forced Labour Convention (No.105)
  3. Equal Remuneration Convention (No.100)
  4. Discrimination (Employment Occupation) Convention (No.111)
  5. Minimum Age Convention (No.138)
  6. Worst forms of Child Labour Convention (No.182)
- The Indian Labour Conference (ILC): ILC is the apex level tripartite consultative committee in the MoLE to advise the Govt. ILC recommendations to fix minimum wages
  1. 3 consumption units for one earner.
2. Minimum food requirements of 2700 calories per average Indian adult.
3. Clothing requirements of 72 yards per annum per family.
4. Rent corresponding to the minimum area provided for under Government's Industrial Housing Scheme.
5. Fuel, Lighting and other miscellaneous items of expenditure to constitute 20% of the total minimum wage.

Source: PIB
Unlawful Religious Conversion Prohibition Ordinance-Uttar pradesh

UPSC GS-PAPER-2 GOVERNANCE – Article -21 & 25 related issue

Context: Highly important to study secularism. UP Government initiated the war against LOVE JIHAD which many groups of people considered the dilution of fundamental rights and freedom of conscience. Article-21 is in the debate which permits RIGHT TO MARRIAGE.

The Uttar Pradesh government has recently passed an ordinance to deal with unlawful religious conversions, which are in opposition of various judgements of the Supreme Court.

What it is?

UP Unlawful Religious Conversion Prohibition Ordinance, 2020:

- Violation of the provisions of the law would invite a jail term of not less than one year extendable to five years with a fine of Rs. 15,000.
- If a minor woman or a woman from the Scheduled Caste (SC) or Scheduled Tribe (ST) converts, the jail term would be a minimum of three years and could be extended to 10 years with a fine of Rs. 25,000.
- The ordinance also lays down strict action, including cancellation of registration of social organisations conducting mass conversions, which would invite a jail term of not less than three years and up to 10 years and a fine of Rs. 50,000.
- It makes religious conversion for marriage a non-bailable offence and the onus will be on the defendant to prove that conversion was not for marriage.
- The notice period to the District Magistrate for the religious conversion is two months.
- In case of conversion done by a woman for the sole purpose of marriage, the marriage would be declared null and void.

SC on Marriage and Conversion:

1. The SC in its various judgments, has held that faith, the state and the courts have no jurisdiction over an adult’s absolute right to choose a life
2. India is a “free and democratic country” and any interference by the State in an adult’s right to love and marry has a “chilling effect” on freedoms.

3. Intimacies of marriage lie within a core zone of privacy, which is inviolable and the choice of a life partner, whether by marriage or outside it, is part of an individual’s “personhood and identity”

4. The absolute right of an individual to choose a life partner is not in the least affected by matters of faith.

Previous Judgements:

Lata Singh Case 1994: The apex court held that India is going through a “crucial transformational period” and the “Constitution will remain strong only if we accept the plurality and diversity of our culture”. Relatives disgruntled by the inter-religious marriage of a loved one could opt to “cut off social relations” rather than resort to violence or harassment.

Hadiya Judgement 2017: Matters of dress and of food, of ideas and ideologies, of love and partnership are within the central aspects of identity. Neither the State nor the law can dictate a choice of partners or limit the free ability of every person to decide on these matters.

K.S. Puttuswamy or ‘privacy’ Judgment 2017: Autonomy of the individual was the ability to make decisions in vital matters of concern to life.

Soni Gerry case, 2018: The SC warned judges from playing “super-guardians”, succumbing to “any kind of sentiment of the mother or the egotism of the father”.

Salamat Ansari-Priyanka Kharwar case of Allahabad High Court 2020: The right to choose a partner or live with a person of choice was part of a citizen’s fundamental right to life and liberty (Article 21). It also held that earlier court rulings upholding the idea of religious conversion for marriage as unacceptable are not good in law.

It’s the duty of the executive and then judiciary to preserve the conscience of the constitution particularly the preamble. Thus, the government implementing such laws needs to ensure that these do not curb one’s Fundamental Rights or hamper national integration instead, these laws need to strike a balance between freedoms and malafide conversions.
Antimicrobial resistance in India

What is Antimicrobial resistance?

- Antimicrobial resistance (AMR or AR) is the ability of a microbe to resist the effects of medication that once could successfully treat the microbe.
- In other words, Antimicrobial resistance (AMR) is the ability of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it.
- As a result, standard treatments become ineffective, infections persist and may spread to others.
- When an organism is resistant to more than one drug, it is said to be multidrug-resistant. Then

What is Antibiotic resistance?

- The term antibiotic resistance is a subset of AMR, as it applies only to bacteria becoming resistant to antibiotics.
- Antibiotics are medicines used to prevent and treat bacterial infections. Antibiotic resistance occurs when bacteria change in response to the use of these medicines.
- Bacteria, not humans or animals, become antibiotic-resistant.
- These bacteria may infect humans and animals, and the infections they cause are harder to treat than those caused by non-resistant bacteria.
- Antibiotic resistance occurs naturally, but misuse of antibiotics in humans and animals is accelerating the process.
- A growing number of infections – such as pneumonia, tuberculosis, gonorrhoea, and salmonellosis – are becoming harder to treat as the antibiotics used to treat them become less effective.
- It leads to higher medical costs, prolonged hospital stays, and increased mortality.
Key findings:

1. India is one of the top users of antibiotics.
2. The private sector clocked high levels of antibiotic prescription rates (412 per 1,000 persons per year).
3. The highest rate was seen among children aged 0–4 years (636 per 1,000 persons) and the lowest in the age group 10–19 years (280 per 1,000 persons).
4. Per-capita antibiotic consumption in the retail sector has increased by around 22% in five years from 2012 to 2016.

Ways by which individuals become antibiotic resistant (2019 PT)
ANTIBIOTIC RESISTANCE
HOW IT SPREADS

Antibiotics are given to patients, which can result in drug-resistant bacteria developing in the gut.

Antibiotics are given to food producing animals and crops.

Antibiotics are given to food producing animals and crops.

Animals develop drug-resistant bacteria in their gut.

Drug-resistant bacteria reach humans through food, the environment (water, soil, air) or by direct human-animal contact.

Drug-resistant bacteria spreads to other patients through poor hygiene and unclean facilities.

Patient attends hospital or clinic.

Drug-resistant bacteria spreads to the general public.

Antibiotic resistance happens when bacteria change and become resistant to the antibiotics used to treat the infections they cause.

world.who.int/drugresistance

#AntibioticResistance

World Health Organization
Inappropriate use of antibiotics such as popping pills for mild ailments like common cold.
Rampant use of antibiotics in livestock and poultry animals. Antibiotics used...
in animals to treat infections and for growth promotion are often passed on to humans who consume their meat.

- Improper disposal of residual antibiotics that eventually enter the food chain.
- Prolonged illness
- Poor diagnosis
- Poor health and hygiene management in Hospitals (Fluid exchange)
- Globalisation

Doctors’ take on antibiotics

- Doctors believe that the inappropriate and sometimes rampant use of antibiotics has transformed the healthy human intestinal gut flora into a reservoir of antibiotic resistance organisms.
- At present organisms are resistant to low end antibiotics but if the misuse persists, these may become resistant to high end antibiotics as well.
- There are as many bacteria in a human body as the number of cells. They perform a host of functions to keep the body running for example, processing the food we eat and modulating the immune system. The antibiotic resistant bacteria aren’t healthy so they cannot perform these functions well.
- The presence of antibiotic resistance in healthy individuals is a cause for concern because it signals that it will get more difficult to treat infections in the future.

India’s action plan for AMR

- A national policy for containment of AMR was introduced in 2011. The policy aims to understand emergence, spread and factors influencing AMR.
- To set up an antimicrobial program to rationalize use of antimicrobials and to encourage the innovation of newer and effective antimicrobials.
- In addition, some major action points identified in the national policy are:
  1. Establishing an AMR surveillance system.
  2. To strengthen infection, prevention and control measures.
  3. Educate, train and motivate all stakeholders in the rational use of antimicrobials.
  4. Providing sanitation, clean water and good governance.
  5. Increasing public health expenditure and better regulating the private health sector.

WHO’s take on antibiotic resistance

- As per the World Health Organization (WHO), antibiotic resistance is rising to dangerously high levels in all parts of the world.
- The alarming rate at which bacteria are becoming resistant has led the World
The world body recommends that countries must prioritize their national action plans to scale up financing and capacity building efforts, put in place a stronger regulatory systems and support awareness programmes for responsible and prudent use of antimicrobials by professionals in humans, animals and plants health.

In addition, countries must invest in ambitious research and development technologies to combat AMR.

The WHO also suggests a number of steps that can be taken at various levels to reduce the impact and also limit the spread of this resistance.

At individual level

- For individuals, the most important step towards preventing and controlling the spread of this antibiotic resistance is to use antibiotics only when prescribed by a certified health professional. Also, never sharing with anyone used leftover antibiotic.
- Preparing food hygienically and avoiding close contact with sick people.
- Practising safer sex and keeping vaccinations up to date.
- Following the WHO’s five keys to safer food i.e. to keep clean, separate raw and cooked, cook thoroughly, keep food at safe temperatures, use safe water and materials and choose foods that have been produced without the use of antibiotics for growth promotion or disease prevention in healthy animals.

For Policymakers

- Policymakers must ensure that a robust national action plan is in place to tackle antibiotic resistance.
- Surveillance of antibiotic-resistant infections must be improved.
- Policies, programmes and implementation of infection prevention and control measures must be strengthened.
- It is required to regulate and promote the appropriate use of quality medicines.
- Information must also be made available on the impact of antibiotic resistance.

For Health Professionals

- Health professionals need to play a major role in preventing and controlling the spread of antibiotic resistance.
- The first and foremost thing that must be done is to ensure that their hands,
instruments and environment are clean.
  • They should only prescribe and dispense antibiotics when they are needed.
  • They must immediately report antibiotic resistant infections to surveillance teams.

For different sectors

  • Sectors like healthcare and agriculture must also act to prevent and control the spread of antibiotic resistance.
  • The healthcare industry can invest in research and development of new antibiotics, vaccines, diagnostics and other tools.
  • The agricultural sector must adhere to the guidelines such as giving antibiotics to animals only under veterinary supervision.
  • Antibiotics should not be used for growth promotion or to prevent diseases in healthy animals.
  • Animals must be vaccinated to reduce the need for antibiotics and use alternatives to antibiotics when available.
  • The agriculture sector should also promote and apply good practices at all steps of production and processing of food from animals and plants sources.
  • In addition, they must also improve biosecurity on farms and prevent infections through improved hygiene and animal welfare.

Global Efforts for Anti-microbial resistance:

GLASS (Global Antimicrobial Surveillance System)

  • In 2015, WHO launched the global antimicrobial surveillance system (GLASS) to work closely with WHO collaborating centres and existing antimicrobial resistance surveillance networks.
  • As members of GLASS, countries are encouraged to implement the surveillance standards and indicators gradually based on their national priorities and available resources.
  • Recently, the United Nations (UN) has begun considering the threat of antimicrobial resistance (AMR) to be at par with diseases like ebola, HIV.
  • The WHO has launched a global campaign that urges countries to adopt its new online tool aimed at guiding policy-makers and health workers to use antibiotics safely and more effectively.

Global Antimicrobial Resistance Surveillance System (GLASS) by WHO
Launched in October 2015, the Global Antimicrobial Resistance Surveillance System (GLASS) is being developed to support the global action plan on antimicrobial resistance. The aim is to support global surveillance and research in order to strengthen the evidence base on antimicrobial resistance (AMR) and help informing decision-making and drive national, regional, and global actions.

**GLASS objectives**

- Foster national surveillance systems and harmonized global standards;
- estimate the extent and burden of AMR globally by selected indicators;
- analyse and report global data on AMR on a regular basis;
- detect emerging resistance and its international spread;
- inform implementation of targeted prevention and control programmes;
- assess the impact of interventions.

**AWARE Tool by WHO**

The tool, known as ‘AWaRe’, classifies antibiotics into three groups:

- **Access** — antibiotics used to treat the most common and serious infections
- **Watch** — antibiotics available at all times in the healthcare system
- **Reserve** — antibiotics to be used sparingly or preserved and used only as a last resort

**Collistin**

- India has been called the epicenter of the global drug resistance crisis. Chickens in numerous poultry farm are being given Colistin, to protect them against diseases or to make them gain weight faster. Doctors call Colistin the ‘last hope’ antibiotic.
- The World Health Organisation has called for the use of such antibiotics to be restricted to animals. These should be banned as growth promoters.
- MCR-1 is one such gene discovered recently. It could be transferred within and between species of bacteria. This means that microbes did not have to develop resistance themselves, they could become resistant just by acquiring the MCR-1 gene.
- The resistance could be passed to bugs which are already multi-drug
resistant. This could lead to untreatable infections.

- Another such gene is New Delhi Metallo-beta-lactamase 1 (NDM-1), which makes bugs resistant to carbapenem antibiotics.

**Why is resistance among microbes a problem?**

1. The answer lies in the intimacy shared between environmental bacteria and human pathogens
2. A pathogen, say Klebsiella pneumoniae (K. pneumoniae), that causes pneumonia, can take two routes to antibiotic resistance
3. The first is for its own genes to mutate spontaneously to help fight the drug
4. The second route, a shortcut known as horizontal gene transfer, is for the bug to borrow resistance genes from its neighbours
5. Scientists believe that many human pathogens today picked up their resistance genes from the environment through this shortcut

**Phenomenon of anti-microbial resistance not new**

1. Phylogenetic studies suggest that the earliest antibiotic-resistance genes in nature are millions of years old
2. But when humans started manufacturing antibiotics in the 1950s, a dramatic shift occurred
3. Large doses of these drugs seeped into the environment through poultry and human excreta, and waste water from drug makers and hospitals
4. This led to an explosion of resistance genes in soil and water microbes

**European project ANSWER**

- It stands for ‘Antibiotics and mobile resistance elements in wastewater reuse applications: risks and innovative solutions’. This project studies technologies to remove antibiotic-resistance germs from wastewater along with other research.

**How is the Anti microbial resistance spread?**
How to stop the spread of Anti microbial resistance?
India’s Efforts for Anti-microbial resistance

National Action Plan on Antimicrobial Resistance, 2017

1. For the first time, the 2017 National Action Plan on Antimicrobial Resistance talks about limiting antibiotics in effluent being dumped by drug makers into the environment
2. This is because when these drugs taint soil and water, the scores of microbes that live there grow drug-resistant
3. Until now, India’s fight against antibiotic-resistance was focussed on getting
India’s Red line campaign:

- It was launched in Feb 2016 and is finding recognition, and could be adopted globally. It should be considered as starting point of restriction over use of antibiotics.
- **Aim:** To decrease the use of Red line antibiotics without prescription, create awareness of danger of taking antibiotics.

Global Antimicrobial Resistance R&D Hub

- Recently, India has joined the Global Antimicrobial Resistance (AMR) Research and Development (R&D) Hub as a new member.
- Working with AMR(R&D) Hub would help India to expand existing capabilities, resources and collectively focus on new R&D intervention to address drug-resistant infections present in the country.
- Global Antimicrobial Resistance (AMR) Research and Development (R&D) Hub is a collaboration of 16 countries, the European Commission, two philanthropic foundations and four international organizations (as observers).
- It was launched in 2018 during the 71st session of the World Health Assembly, following a call from G20 Leaders in 2017.
- It is supported through a Secretariat, established in Berlin, Germany.
- It aims to further improve the coordination of international efforts and initiatives to tackle Antimicrobial Resistance while further increasing investments into R&D for AMR.
- The work of the Global AMR R&D Hub will be aligned to the priorities set by
  1. World Health Organization (WHO)
  2. Food and Agriculture Organization of the United Nations (FAO)
- It enforces the One Health Approach by including environmental aspects and veterinary medicine against antimicrobial resistance.
- It integrates human and animal health, worldwide food safety and environmental factors.

Other Steps to fight against AMR

- Infection control in healthcare facilities.
- Creating awareness about the use and abuse of antibiotics.
- Vaccination can combat drug resistance by reducing the cases of infection and as a result reducing the need for antibiotics.
- Strengthening resistance tracking so that data on antimicrobial resistant infections and causes of infection can be gathered to enable formulation of...
specific strategies to prevent the spread of the resistant bacteria.

- Self-medication should be shunned.
- Antibiotics should be used only when prescribed by the doctor.
- Appropriate and safe use of antibiotics - taking antibiotics only when needed, choosing the right antibiotic and completing the full prescription.
- Invest in the search for new antibiotics to keep up with resistant bacteria as well as in new diagnostic tests to track the development of resistance.

**Impacts of Anti-Microbial resistance**

- A threat to prevention and treatment of infections - medical procedures such as organ transplantation, cancer chemotherapy, diabetes management and major surgery (for example, caesarean sections or hip replacements) become very risky.
- The failure to treat infections caused by resistant bacteria also poses a greater risk of death.
- Antimicrobial resistance increases the cost of health care with lengthier stays in hospitals, additional tests and use of more expensive drugs.
- Without effective antibiotics for prevention and treatment of infections, the achievements of modern medicine are put at a risk.
- Without urgent action, we are heading to antibiotic apocalypse – a future without antibiotics, with bacteria becoming completely resistant to treatment and when common infections and minor injuries could once again kill.
- Antimicrobial resistance is putting the gains of the Millennium Development Goals at risk and endangers achievement of the Sustainable Development Goals.

**Shortcomings in fighting AMR**

- A cross-cutting programme dealing with antimicrobial resistance across multiple microbes has been lacking.
- Absence of a One Health Approach in addressing AMR – which recognizes that human well-being is inextricably tied to the health of animals and the environment.
- The absence of stringently framed and implemented regulatory frameworks to limit the use of antimicrobials in livestock and food animals, especially for non-therapeutic purposes, has been one of the drivers of antibiotic overuse at the community level.
- In India, current effluent standards do not include antibiotic residues, and thus they are not monitored in the pharmaceutical industry effluents.

**Way Forward**
AMR has the potential to return the world to a pre-antibiotic era when medicines could not treat even simple infections. Therefore, to contain AMR, there is need for a One Health Approach through coherent, integrated, multi-sectoral cooperation and actions, as human, animal and environmental health are integrated. Development of antibiotic resistance breakers (ARBs) to restore effectiveness of older classes of antibiotics.

Conclusion

Antibiotic resistance is not a problem that can be solved by any one country or even one region. Since we live in a connected world, where people, animals and food travel and microbes travel with them, a global action is essential to make progress in the long run. Increasing public awareness and understanding is therefore the most crucial pillar towards tackling antimicrobial resistance. AMR is an increasingly serious threat to the global public health that requires action across all government sectors and societies.

Why only some bacteria develop multi-drug resistance?

During evolution, the fitness costs experienced by bacteria under constant and fluctuating environments pose an unsolved problem. One way of seeing this is through the example of multi-drug resistance. It is not clear why some bacteria evolve multi-drug resistance while others do not. New research from the Population Biology Lab at IISER Pune could hold a key to this and a similar class of puzzles. Multi-drug resistance is a menace in public health, however it is a fascinating problem to an evolutionary biologist who sees it from this angle: possessing multi-drug resistance implies that the bacteria is adept at handling multiple antibiotics simultaneously. This would increase its fitness appreciably. Given that antibiotics exert a very strong selection pressure, it would appear that every bacterium in nature can become multi-drug resistant, which is not the case. When bacteria become fit in one environment, they either lose fitness or fail to increase fitness in other environments. Yashraj Chavhan, Sarthak Malusare, and Sutirth Dey studied populations of small and large sizes across different constant and fluctuating environments and then subjected the evolved populations to whole-genome, whole-population sequencing analysis.
They found that small populations acquire a certain set of mutations which allow them to survive in one environment while paying a cost in others. Large populations also develop these mutations but, in addition, have certain compensatory mutations that together give them fitness to survive in different environments. Thus, population size determines the kind of mutations available to the bacteria, which in turn, leads to the type of fitness costs they evolve.

Population size matters

- In the paper, published in Ecology Letters, the group studied approximately 480 generations of E. coli in four types of steady environments consisting of different carbon sources: galactose, thymidine, maltose and sorbitol; also in one fluctuating environment in which the carbon source changed unpredictably between these four. Bacteria cannot use all carbon sources similarly.
- “Which carbon source is available impacts the bacterium’s ability to survive and grow. Since this is a very basic requirement for survival and growth, we decided to study what the availability of different kinds of carbon sources does to their evolution,” says Prof Dey.
- The study showed that, all else being equal, whether the bacteria pay fitness costs or not will depend on the population size they evolve in.

Source: TH
Iran Nuclear Deal and JCPOA

- Iran has informed the International Atomic Energy Agency (IAEA) that it intends to produce uranium enriched to up to 20% purity, well beyond the threshold set by the 2015 Vienna accord, the UN nuclear watchdog said.
- Iran informed the agency of its intention to enrich uranium at a rate of up to 20% in its Fordow underground plant, to comply with a law recently passed by the Iranian Parliament.
- According to the latest report available from the UN agency, published in November, Tehran was enriching uranium to levels greater than the limit provided for in the Vienna agreement (3.67%) but not exceeding the 4.5% threshold, and still complied with the Agency’s very strict inspection regime.
- But there has been turmoil since the assassination in late November of Iranian nuclear physicist Mohsen Fakhrizadeh.
- In the aftermath of the attack, blamed on Israel, hardliners in Tehran pledged a response and Parliament passed a controversial law calling for the production and storage of “at least 120 kg per year of 20% enriched uranium” and to “put an end” to the IAEA inspections intended to check that the country is not developing an atomic bomb.
- The Iranian government had opposed the initiative at the time.

What is the Iran nuclear deal?

- It is officially called the Joint Comprehensive Plan of Action (JCPOA).
- Commonly as the Iran nuclear deal or Iran deal, is an agreement on the Iranian nuclear program reached in Vienna on July 14, 2015, between Iran and the P5+1 (the five permanent members of the United Nations Security Council—China, France, Russia, United Kingdom, United States—plus Germany) together with the European Union.
- It was signed between Iran and the P5, plus Germany and the EU in 2015. P5 is the 5 permanent members of the UNSC (US, China, France, Russia, and UK).
- Under JCPOA, Iran agreed to eliminate its stockpile of medium-enriched uranium, cut its stockpile of low-enriched uranium by 98%, and reduce by about two-thirds the number of its gas centrifuges for 13 years.
- For the next 15 years Iran will only enrich uranium up to 3.67%. Iran also
agreed not to build any new heavy-water facilities for the same period of time.

- Uranium-enrichment activities will be limited to a single facility using first-generation centrifuges for 10 years. Other facilities will be converted to avoid proliferation risks.
- To monitor and verify Iran’s compliance with the agreement, the International Atomic Energy Agency (IAEA) will have regular access to all Iranian nuclear facilities.
- The agreement provides that in return for verifiably abiding by its commitments, Iran will receive relief from U.S., European Union, and UNSC nuclear-related sanctions.
- On 5 January 2020, in the aftermath of the Baghdad Airport Airstrike that targeted and killed Iranian general Qassem Soleimani, Iran declared that it would no longer abide by the limitations of the deal but would continue to coordinate with the IAEA, leaving open the possibility of resuming compliance.
International Atomic Energy Agency (IAEA)

- The International Atomic Energy Agency (IAEA) is an international organization that seeks to promote the peaceful use of nuclear energy, and to inhibit its use for any military purpose, including nuclear weapons.
- The IAEA was established as an autonomous organization in 1957.
- Though established independently of the United Nations through its own international treaty, the IAEA Statute, the IAEA reports to both the United Nations General Assembly and Security Council.
- The IAEA has its headquarters in Vienna, Austria.
The IAEA has two "Regional Safeguards Offices" which are located in Toronto, Canada, and in Tokyo, Japan. The IAEA serves as an intergovernmental forum for scientific and technical co-operation in the peaceful use of nuclear technology and nuclear power worldwide. The IAEA and its former Director General, Mohamed ElBaradei, were jointly awarded the Nobel Peace Prize 2005. Recently Iran has refused to allow IAEA to two sites where nuclear activity may have occurred in the past (Parachin and Frodo).

Other important Articles

1. Joint Comprehensive Plan of Action- Iran nuclear deal
2. Iran to enrich Uranium to 60%, the highest ever
3. Iran Nuclear Deal- Joint Comprehensive Plan of Action

Source: TH

How to minimize disaster risk for glacial lake outburst floods (GLOF)

Suitably called Earth’s “Third Pole”, the Himalayan region is home to the largest ice mass outside of the planet's Polar Regions. The glaciers in the Himalayas are melting at a faster rate creating new lakes and expanding the existing ones. Besides, the rising temperatures and extreme precipitation events make the region increasingly prone to a variety of natural hazards, including devastating glacial lake outburst floods (GLOFs). GLOFs occur when either a natural dam containing a glacial lake bursts or when the lake's level suddenly increases and overflows its banks, leading to catastrophic downstream destruction.
For example, in 2013, an avalanche caused the glacial moraine holding back Chorabari Lake in northern India to give way, releasing a sudden torrent of water, boulders, and debris that scoured the river valley below, resulting in the deaths of more than 5,000 people.

With climate change, these events are likely to increase in frequency and magnitude throughout the Himalayas.

However, the remote, challenging Himalayan terrain and the overall lack of cellular connectivity throughout the region have made the development of early flood warning systems virtually impossible.

Temperature and the numbers of extreme rainfall events are rising at an increased rate because of climate change.

A recent study

Satellite-based real-time monitoring of Himalayan glacial catchments would improve understanding of flood risk in the region and help inform an early flood warning system that could help curb disaster and save human lives, says a recent study.

This should be the future strategy to reduce loss of human lives during glacial lake outburst floods (GLOF), said a study carried out by scientists from IIT Kanpur.

In their recent work, the Scientists also point out that the surge of meltwater in mountain streams is most commonly caused by cloud-burst events during the monsoon season (June–July–August) time frame.

However, the recent (7 February 2021) sudden surge of meltwater in the river tributary of the Ganga, Dhauli Ganga, during the dry season suggests that this time frame needs to be expanded.

The catastrophe in the upper Dhauli Ganga basin is linked to processes other than precipitation events, such as snow avalanches, rock landslides, or other unidentified drivers, and therefore determining all of the potential major and minor drivers behind sudden surges of meltwater into headwater streams is vital for understanding the hazard profile of the region.

The IIT Kanpur team suggests that efforts to help mitigate GLOF events in the future should include the creation of a network of satellite-based monitoring stations that could provide in situ and real-time data on GLOF risk.

Source: PIB
Coral Reefs

- **Coral Polyp is a living animal** living in a symbiotic relationship with zooxanthallae algae.
- **Corals are actually white** and they receive their colors and Energy from zooxanthallae algae.
- **Coral polyp provides Algae with protected Environment**.
- **Productivity of Estuaries > Swamp, Marshes, Wetlands > Coral Reefs > Equatorial and Tropical rainforests > Savannah.**
- Coral reefs are CaCO3 (Limestone) material. **Majority of corals are found in tropical and subtropical water**, there are also deepwater corals in colder regions.
- Coral belongs to the class **Anthozoa** in the animal phylum Cnidaria, which includes sea anemones and jellyfish.
- Unlike sea anemones, **corals secrete hard carbonate exoskeletons** that support and protect the coral.
- Most reefs grow best in warm, shallow, clear, sunny and agitated water.
- Sometimes called **rainforests of the sea**, shallow coral reefs form some of Earth’s most diverse ecosystems.
- They are most commonly found at **shallow depths in tropical waters**, but **deep water and cold water coral reefs exist** on smaller scales in other areas.

**Other terms**

- **Cold Water Corals**
  1. They inhabit deep, cold water. **UNEP says that there are more cold water coral reefs worldwide than tropical reefs.**
  2. The **largest cold water coral reef is the Rost Reef off the coast of Norway.**
- **Snowflake Coral**: is a species of soft coral native to tropical western Atlantic Ocean. It is **invasive species**. It has emerged as a major threat to Gulf of Mannar, Gulf of Kutch and A&N Islands.
- **Retrotransposons**: They are the specialized genes which may help Coral adapt more to heat stress.
- **Symbiodinium** is a unicellular algae which gives Coral hosts photosynthetic products in return for nutrients and shelter.
- According to UNEP, % of **world area** covered by each
Staghorn Coral is Critically Endangered in IUCN. Its species declined by > 80% over last 30 years because of humans, disease and CC. It is vulnerable to bleaching.

- Coral reefs deliver ecosystem services for tourism, fisheries and shoreline protection.
- Coral reefs are fragile, partly because they are sensitive to water conditions.

**Features of Coral Reefs**

- They occur in shallow tropical areas where the sea water is clean, clear and warm.
- Coral reefs are among the world's most diverse ecosystems, with more than 800 species of corals providing habitat and shelter for approximately 25% of global marine life.

**Benefits of Coral Reefs**

- They protect coastlines from tropical storms, provide food and income for 1 billion people, and generate $9.6 billion in tourism and recreation each year.
- Functions of Coral Reefs: Natural barriers against erosion and storm surge; captures nutrients; provide substrate for Mangroves and habitat for flora and fauna.

**Growth conditions for Coral reefs**

- The temperature of the water should not be below 20°C. The most favourable temperature for the growth of the coral reefs is between 23°C to 25°C. The temperature should not exceed 35°C.
- Corals can survive only under saline conditions with an average salinity between 27% to 40%.
- Coral reefs grow better in shallow water having a depth less than 50 m. The depth of the water should not exceed 200m.

**Types of Coral Reefs**

Coral Reefs are differentiated into three categories based on their shape, nature and mode of occurrence.

- **Fringing Reef**: The coral reefs that are found very close to the land and form a shallow lagoon known as Boat Channel are called Fringing Coral Reefs. The Fringing Reefs develop along the islands and the continental margins. They grow from the deep bottom of the sea and have their seaward side sloping steeply into the deep sea. Fringing Reefs are the most commonly found coral reefs among the three. For example, Sakau Island in New Hebrides, South Florida Reef.

- **Barrier Reef**: Barrier Reefs are considered as the largest, highest and widest reefs among the three coral reefs. They develop off the coast and parallel to the shore as a broken and irregular ring. Being the largest reef among the all, they run for 100kms and is several kilometres wide. **Great Barrier Reef** = It is **World's largest coral reef system**. Can be seen from space. World's biggest single structure made by living organisms. **UNESCO WHS. It is in**
Queensland, Australia. Biggest coral reseeding project launched on Great Barrier Reef.

- **Atolls**: An atoll can be defined as a reef that is roughly circular and surrounds a large central lagoon. This lagoon is mostly deep having a depth of 80-150 metres. The atolls are situated away from the deep sea platforms and are found around an island or on a submarine platform in an elliptical form. For example Fiji Atolls, Suvadivo in Maldives and Funafoothis Atoll of Ellice.

In India the types of Coral reefs are

- Fringing Reefs in Andaman and Nicobar.
- Barriers reefs in Gulf of Mannar and Gulf of Kachch (Kurumbar, Neora and Bhaidar Island).
- Atolls are found in Lakshadweep and Nicobar.
- A&N corals are very rich in species diversity followed by...
Lakshadweep Islands, Gulf of Mannar and Gulf of Kuchch.

Threats: They are under threat from excess nutrients (nitrogen and phosphorus), rising temperatures, oceanic acidification, overfishing (e.g., from blast fishing, cyanide fishing, spearfishing on scuba), sunscreen use, and harmful land-use practices, including runoff and seeps (e.g., from injection wells and cesspools)(PT).
Coral Bleaching is the process when due to increased water temperature, Coral hosts expels/ breaks the relation with Algae and thus it turns into white. It occurs when the zooxanthallae alge decline due to high temperature, solar irradiance, sedimentation etc.

When corals face stress by changes in conditions such as temperature, light, or nutrients, they expel the symbiotic algae zooxanthellae living in their tissues, causing them to turn completely white. This phenomenon is called coral bleaching.

Xenobiotics: Zooxanthallae loss occurs during exposure of coral to elevated concentrations of various chemical contaminants like Cu, herbicides and oil.

They can recolonize when the water temperature reduces on the basis of Ecosystem resilience.

Epizootics: Pathogen induced bleaching is Epizootics.

The pale white colour is of the translucent tissues of calcium carbonate which
are visible due to the loss of pigment producing zooxanthellae. 
- Corals can recover if the stress-caused bleaching is not severe.
- Coral bleaching has occurred in the Caribbean, Indian, and Pacific oceans on a regular basis.

The United Nations has reported that:

- 70% of the Earth's coral reefs are threatened,
- 20% have been destroyed with no hope for recovery,
- 24% are under imminent risk of collapse, and
- an additional 26% are at risk due to longer-term threats.
- According to a recent report, if stern measures to bring down the greenhouse gas emission levels are not adopted urgently, then Australia’s Great Barrier Reef might be in danger of coral bleaching as frequently as every two years by 2034. Large scale coral bleaching in 2016 destroyed thousands of square kilometres of the Great Barrier Reef.
- Hawaii became the first U.S. state to put curbs on the sale of sunscreens containing oxybenzone and octinoxate, which can cause coral bleaching.

Causes of Coral Bleaching?

- **Rise in Sea Temperature**: Most coral species live in waters close to the warmest temperature they can tolerate i.e., a slight increase in ocean temperature can harm corals. El Nino elevates the sea temperature and destroys coral reefs.
- **Ocean Acidification**: Due to rise in carbon dioxide levels, oceans absorb more carbon dioxide. This increases the acidity of ocean water and inhibits the corals ability to create calcareous skeletons, which is essential for their survival.
- **Solar radiation and ultraviolet radiation**: Changes in tropical weather patterns result in less cloud cover and more radiations which induce coral bleaching.
- **Infectious Diseases**: Penetration of bacterium like vibrio shiloi inhibits photosynthesis of zooxanthellae. These bacteria become more potent with elevated sea temperatures.
- **Chemical Pollution**: Increased nutrient concentrations affect corals by promoting phytoplankton growth, which in turn supports increased numbers of organisms that compete with coral for space.
- **Increased Sedimentation**: Land clearing and coastal construction result in high rates of erosion and a higher density of suspended silt particles which can
  1. smother corals when particles settle out (sedimentation),
2. reducing light availability (turbidity) and
3. potentially reducing coral photosynthesis and growth.

- Human Induced Threats: Over-fishing, pollution from agricultural and industrial runoff, coral mining, development of industrial areas near coral ecosystems also adversely impact corals.

Consequences

- Changes in coral communities can affect the species that depend on them, such as the fish and invertebrates that rely on live coral for food, shelter. Loss of such marine animals can disturb the entire food chain.
- Declines in genetic and species diversity may occur when corals die as a result of bleaching.
- Healthy coral reefs attract divers and other tourists. Bleached and degraded reefs can discourage tourism, which can affect the local economy.
- Coral bleaching can cause large shifts in fish communities. This can translate into reduced catches for fishers, which in turn impacts food supply and associated economic activities.
- Coral reefs protect coastlines by absorbing constant wave energy from the ocean, thereby protecting people living near the coast from increased storm damage, erosion and flooding.

Efforts to save Coral reefs and other programmes

- Coral Rehab Programme, 2002 implemented by Gulf of Mannar Marine NP: To recover coral reefs. It has recovered 8 sq. km area in GoM region, where coral reefs suffered bleaching and degradation due to climate change and high temperature.
- Australia has started a campaign to save great barrier reef from coral eating crown of thorns star fish. 2 reasons: Agriculture runoff & pollution. Thus money will be spent as an incentive to farmers to reduce runoffs and vessels & divers targeting that fish.
- Kelps and coral reefs are composed of algae that grow in the shallow parts of the ocean in warm and sunny waters. However, kelp forest grows in nutrient-rich waters while corals can develop in low nutrient waters.
- A bid to restore Coral reefs in Gulf of Kutch using Biorocks or Mineral Accretion technology
1. Kurumbar, Neora and Bhaidar Island of Kutch has Coral reefs.
2. Biorock is the substance formed by electro accumulation of minerals dissolved in seawater on steel structures that are lowered onto the sea bed and are connected to a power source. Biorock is kept within HTL - LTL of 8 m to 4 m respectively.
3. When anode (positive) and cathode (negative) are placed on seafloor and current is flowing, Calcium ions combine with Carbonate ions to form Calcium Carbonate.
4. In 2015, the same group restored bleaching coral species (staghorn corals) belonging to family Acroporidae that had gone extinct about 10000 years ago.

What is the news?

- As a fabled wonder of the natural world, Australia’s Great Barrier Reef and its diversity of marine life ranging from corals to whales found a place on UNESCO’s World Heritage List in 1981.
- Made up of a couple of thousand individual reefs off the continent’s northeastern coast, it has a geological history going back an estimated 23 million years to the Miocene epoch, and has survived many challenges.
- The GBR is about 2,300 km long and extends across a breathtaking 346,000 sq. km. area, hosting an assemblage of fishes and invertebrates in the reefs, dugongs, green turtles and other species in seagrass meadows, and sharks, rays, anemones, sponges, worms and myriad other forms all of which need a delicate ecological balance to thrive.
- Idyllic as it appears, the reef system faces severe environmental threats, and this year, the World Heritage Committee has sounded a warning by drawing up a resolution to inscribe the reef on the ‘List of World Heritage in Danger’.
- The Committee took note of the 2019 Outlook Report of the Great Barrier Reef Marine Park Authority, which says in no uncertain terms that the long-term state of the ecosystem has further deteriorated from poor to very poor.
- At the heart of the crisis is climate change, which has led to three big events of coral bleaching in 2016, 2017 and 2020. UNESCO’s move to list the GBR as ‘in danger’ brings pressure on Australia’s government to review its record on responding to climate change.
- As a continent that has recorded a rise in its average temperature by 1.4 degrees C since 1910, the devastating fires of 2019-20 were another wake-up call on climate change aggravating extreme events.
- The World Heritage Committee resolution calls upon Prime Minister Scott Morrison’s government to heed the conclusions of the Outlook Report,
particularly on accelerated action needed to address climate change with the Paris Agreement goals in focus.

- The updated Reef 2050 Plan that the country is pursuing for conservation should incorporate this.
- Further, the government should stop destructive impacts of human activity such as land-based and farm run-off that has polluted waters, coastal development and other commercial uses, it adds.
- The World Heritage Centre, the administrative body, had sent a letter to Australia in 2019 raising concerns “about the approval of the Carmichael Coal Mine”, a controversial project with impacts for the reef and the climate, to which it got a response noting “that the project’s approval is subject to over 180 regulatory conditions and that compliance with these conditions will be monitored.”
- The Outlook Report records harm to “the abundance and health of many species groups, including corals, invertebrates, some bony fishes, marine turtles and seabirds” from the rising sea temperatures and thermal extremes due to global warming.
- It adds that since 2014, there has been widespread and significant declines in many coral species. In 2018, coral larvae declined by 89% averaged across the region, arising from consecutive bleaching events, as the adult broodstock was reduced.
- Warmer temperatures led to “feminisation of green turtles originating from nesting beaches in the northern Region, potentially leading to significant scarcity or absence of adult males in the future”. Coral growth is also endangered by the proliferation of crown-of-thorns starfish, which consumes them.
- Some relief is available from the reported recovery of humpback whales, and slow gain in southern populations of green turtles. Urban coastal dugong populations also show an improved breeding rate. But overall, the reef is under threat.
- A magnet for eco-tourists, the vast expanse coloured by algal hues draws thousands annually. The report says that in 2015-16, tourism, fishing, recreational uses and scientific activities contributed an estimated $6.4 billion to the Australian economy, a rise of about 14% since 2011-12. Without resolute action on climate and pollution threats, though, all sectors stand to lose.

Source: TH
Indian Railways on way to become "Largest Green Railways" in the world with Zero Carbon Emission

Indian Railways (IR) is working in mission mode to become the largest Green Railways in the world and is moving towards becoming a “net zero carbon emitter” before 2030.

Railways is guided by a holistic vision of being an environment friendly, efficient, cost effective, punctual and a modern carrier of passengers as well as freight in order to serve the growing needs of New India.

IR is looking at helping the environment with steps ranging from massive electrification, water & paper conservation, to saving animals from being injured on Railway tracks.

Railway Electrification which is environment friendly and reduces pollution, has increased nearly ten times since 2014.

Capturing the economic benefits of electric traction in an accelerated manner, Railways has planned to electrify balance Broad Gauge (BG) routes by December, 2023 to achieve 100% electrification of BG routes.

Head-On-Generation systems, Bio-Toilets and LED lights recreate the train itself into a travel mode that’s kinder to the environment while maintaining comparable passenger comfort.

IR’s Dedicated Freight Corridors are being developed as a low carbon green transportation network with a long-term low carbon roadmap, which will enable it to adopt more energy efficient and carbon-friendly technologies, processes and practices.

IR is implementing two Dedicated Freight Corridor projects viz. Eastern Corridor (EDFC) from Ludhiana to Dankuni (1,875 km) and Western Corridor (WDFC) from Dadri to Jawaharlal Nehru Port Trust (1,506 km). Sonnagar-Dankuni (538 km) portion of EDFC has been planned for execution on Public Private Partnership (PPP) mode.

IR’s network and reach enabled movement of Freight, like Food Grains & Oxygen in pandemic, even while being more environment friendly as compared to Road transport.

During the period April 2021 to May 2021, the Indian Railways moved 73
Lakh tonnes of food grains and has run 241 loaded Oxygen express trains, moving 922 loaded tankers, thereby transporting 15,046 tonnes of oxygen to various part of the country.

**Green Certifications and implementation of Environment Management System:**

- MoU signed between IR and Confederation of Indian Industry in July 2016 for facilitation of Green initiatives on IR. 39 Workshops, 7 Production Units, 8 Loco Sheds and one Stores depot have been ‘GreenCo’ certified. These include 2 Platinum, 15 Gold and 18 Silver ratings.
- Green certification mainly covers assessment of parameters having direct bearing on the environment, such as, **energy conservation measures, use of renewable energy, Green House Gas emission reduction, water conservation, waste management, material conservation, recycling etc.**
- 19 Railway Stations have also achieved Green Certification including 3 Platinum, 6 Gold and 6 Silver ratings.
- 27 more Railway Buildings, Offices, Campuses and other establishments are also Green certified including 15 Platinum, 9 Gold and 2 Silver ratings.
- In addition, over 600 Railway Stations have been certified for implementation of the Environment Management System to **ISO: 14001** in the last two years. A total of 718 stations have been identified for ISO : 14001 certification.
- Indian Railways has incorporated Climate Change features in its own risk assessments and disaster management protocols.
- As an organisation ready to manage the risks, and ask the right questions about its assets, routes & investments. Top management in IR’s many public sectors have been communicating with stakeholders for a shared understanding, needed for long-term health and sustainability of the organisations they lead.

Source: PIB
Finance Minister Nirmala Sitharaman announced some fresh relief measures for the economy, the first such package after the second COVID-19 wave, focusing largely on extending loan guarantees and concessional credit for pandemic-hit sectors and investments to ramp up healthcare capacities.

The government pegged the total financial implications of the package, which included the reiteration of some steps that were already announced, such as the provision of foodgrains to the poor till November and higher fertilizer subsidies, at ₹6,28,993 crore.

Economists, however, noted that the elements of direct stimulus in the package and its upfront fiscal costs in 2021-22, are likely to be limited. More steps may be needed to shore up the economy through the rest of the year, they said.

Calling the measures an effort to stimulate growth, exports and employment as well as provide relief to COVID-affected sectors, Ms. Sitharaman announced an expansion of the existing Emergency Credit Line Guarantee Scheme by ₹1.5 lakh crore.

She also announced a new ₹7,500 crore scheme for loans up to ₹1.25 lakh to small borrowers through micro-finance institutions.

She also unveiled a fresh loan guarantee facility of ₹1.1 lakh crore for healthcare investments in non-metropolitan areas and sectors such as tourism.

A separate ₹23,220 crore has been allocated for public health with a focus on paediatric care, which will also be utilised for increasing ICU beds, oxygen supply and augmenting medical care professionals for the short term by recruiting final year students and interns.

Indirect support for exports worth ₹1.21 lakh crore over the next five years, free one-month visas for five lakh tourists, and new seed varieties for farmers were also included in the package.

The existing sop to spur employment, where the government bears EPF contributions for new employees earning less than ₹15,000 a month for two years, has been extended till March 31, 2022.

“Setting aside the guarantee schemes and the announcements that had already been made earlier, the step up in the fiscal outgo within 2021-22 based on the fresh announcements is estimated at around ₹60,000 crore,”
said Aditi Nayar, rating agency ICRA’s chief economist.

- Economist D.K. Srivastava reckoned that the additional burden on the 2021-22 Budget from the ‘three direct stimulus initiatives’ — providing free foodgrains, incremental health projects’ spending, and rural connectivity — would be ₹1,18,390 crore or about 0.5% of estimated GDP for 2021-22.
- “Although the total impact amount seems large at nearly ₹6.29 lakh crore, a large portion of this is by way of credit guarantee schemes where there is no immediate outflow. The impact on the fiscal deficit will be limited while the stock markets could give a mild positive reaction,” said HDFC Securities managing director and CEO Dhiraj Relli.

Source: TH

**Agni-P (Prime) missile**

A new-generation nuclear-capable ballistic missile, Agni-P (Prime) was successfully test-fired by the Defence Research and Development Organisation (DRDO). The test was conducted at 10.55 a.m. from the Dr. A.P.J. Abdul Kalam island, Balasore, off the coast of Odisha.

- Agni-P is a new-generation advanced variant of Agni class of missiles. It is a canisterised missile with range capability between 1,000 and 2,000 km.
- Explaining the differences from the earlier Agni class of missiles, a DRDO official said Agni-P had improved parameters, including manoeuvring and accuracy.
- **Canisterisation of missiles reduces the time required to launch the missile** while improving its storage and mobility.
- The Agni class of missiles are the mainstay of India’s nuclear launch capability which also includes the Prithvi short-range ballistic missiles, submarine-launched ballistic missiles and fighter aircraft.
- **The longest of the Agni series, Agni-V, an Inter-Continental Ballistic Missile (ICBM) with a range of over 5,000 km,** has already been tested several times and validated for induction.
- In the past few years, India has also operationalised its submarine-based
nuclear launch capability, completing the nuclear triad.  
- This is especially important given India’s no-first-use policy while reserving the right of massive retaliation if struck with nuclear weapons first.  
- As reported by The Hindu earlier, the DRDO, in January 2020, successfully test-fired a **3,500-km range submarine-launched ballistic missile, K-4**, from a submerged pontoon off the Visakhapatnam coast.  
- Once inducted, these missiles will be the mainstay of the **Arihant class of indigenous ballistic missile nuclear submarines (SSBN)** and will give India the stand-off capability to launch nuclear weapons submerged in Indian waters. **INS Arihant**, the only SSBN in service, is armed with **K-15 missiles with a range of 750 km**.

For Ankit Sir’s Free Lecture on India Year Book Defense Chapter: [Click here](#)

For comprehensive notes on Missile development: [click here](#)

For comprehensive notes and pdf on defense: [click here](#)

Source: TH

---

**Disinvestment**

GS-III | 29 June, 2021

1. Disinvestment refers to **sale or liquidation of an assets or subsidiary** of an organization or government but any condition **Govt share should not go below 51%**.
2. It is done by Dept of Investment and Public Asset Management (DIPAM), Ministry of Finance from 2016.
3. Industrial Policy Resolution, 1956 talks about the growth of the country through PSUs. Hence, from **2nd Five Year Plan** we started focusing on PSEs.
4. **Salient Features of Disinvestment Policy**
   1. PSUs are **wealth of Nation** and it ensures that wealth rests in hands of people, promote **public ownership** of CPSEs.
2. Govt must retain at least 51% of shareholding and management control of PSUs.
3. **Strategic disinvestment** by way of sale of substantial portion of Govt in identified CPSEs **upto 50% or more** along with **transfer of management control**.

**Phases of Disinvestment**

- **Phase I**: In 1991 PVNR Govt initiated disinvestment: In 1991 policy it was announced that **government would disinvest upto 20%** of its equity in selected PSUs mainly through MFs and FIIs (Financial institutions investors).
- **Phase II**: More people allowed in disinvestment like FIIs, Employees of the Company etc.
- **Phase III**
  - The Govt appointed **C Rangarajan Committee**: who recommended **~49% of disinvestment**.
  - Atal Bihari Vajpayee adopted major disinvestment policy HINDALCO, BALCO. It talked about Stake Sale.
  - **Stake sale** is a larger share that can be sold to LIC or other profitable PSUs **not individual investors**.
  - PSUs were bifurcated into 2: Strategic (defense, atomic) and Non strategic.
  - **2005**: Govt came out with **National Investment Fund** under Public Accounts of India.
    - Purpose of the fund was to receive **disinvestment proceeds** of CPSEs.
    - Money from disinvestment is put upon this money is **invested** in stock market or other investment instruments the **income of which**
      - 75% of returns are used in social sector like NREGA, Housing for All, AIBP, Health, Education, Employment etc.
      - 25% can be utilized for Profitable PSUs and **revival of PSUs**.
    - This fund was professionally managed by 3 Fund Managers: UTI, SBI and LIC. But CCEA restructured the NIF and decided to do away with the management of the disinvestment proceeds by the Fund Managers of NIF. Now from 2013, **all the money is credited to Public Accounts**.
    - **Special NIF**
      - It is kept outside the CFI to transfer the shares of **only certain loss making CPSEs** which are **non-compliant** with the rule that minimum 10% of shares issued be held by public.
Only shares are transferred here and not receipts from the sale of shares of CPSEs

Phase IV: Current Disinvestment

1. In last 3 years, Govt is increasing their disinvestment targets from 80000 crore rs to 1.05 lakh crore rupees.
2. But as per Economists, Hyper Disinvestment because of declining revenues of Govt due to GST and Demonetization to achieve targets of FD and to achieve poll promises is not good. This led to disinvesting BPCL, Concor etc. even breaching the 51% limit.

Strategic Disinvestment in 5 PSEs
- Government to sell entire stake in Bharat Petroleum (BPCL), Shipping Corporation of India (SCI), Container Corporation of India (CONCOR). Also THDCIL and North East Electric Power Corporation (to NTPC). Disinvestment done because of massive shortfall in revenue and capital receipts (according to Controller General of Accounts).
- BPCL was a profitable, yet they disinvested it. This is a concern. Numaligarh refinery is in Assam.
- How the Government completes the transaction is a concern – from appointment of advisers, to deciding the pricing mechanism and initiating a transparent bidding process before finalizing a buyer - is a big question.

Bharat Bond ETF (Exchange Traded Fund) to be India’s 1st Corporate Bond ETF
- ETF to comorise basket of bonds issues by CPSEs, CPSUs, CPFIs and other government entities and all will be initially rated AAA with ?1000 for each unit to attract retail investors.
- DIPAM (Department of Industry and Public Asset Management) is responsible for disinvestment in the country.
- Each ETF will have a fixed maturity dates initially to be issued in 2 series of 3 years and 10 years.
- Benefits
  - Bond ETF will provide safety (issued by CPSEs & govt owned agencies), liquidity (tradability on exchange), additional source of funding for issuers (apart from banks) and predictable tax efficient returns.
  - It would help deepen India’s bond market as it will encourage participation of those retail investors who are currently not participating in bond markets including HNI participants.
- In Budget 2020, FM announced to sell a part of its 100% stake in LIC by an
IPO.
- LIC was established in 1956 through an Act of Parliament.
- Before Govt divests a part of its stake through a public issue, it will have to ensure that it amends the LIC Act, which ensures a sovereign guarantee for all policies under Section 37 of the Act.

What is the news?

- Chief Economic Adviser Krishnamurthy Subramanian has expressed confidence that the ₹1.75-lakh crore disinvestment target of this fiscal will be achieved, with a good part coming from the proposed IPO of insurance behemoth LIC and privatisation of Bharat Petroleum Corporation (BPCL).
- While LIC’s public issue and BPCL privatisation are expected to contribute a chunk of the target, from a signalling perspective, Air India’s privatisation is also very important, on which too work is happening, the CEA said.

Source: TH

Plan for India to become Atmanirbhar in Phosphatic fertilizers (DAP and NPK)

- Department of Fertilisers is ready with an Action Plan to make India Aatmanirbhar in Rock Phosphate, the key raw material of DAP and NPK Fertilisers.
- An Action Plan was chalked out for making India Aatmanirbhar in fertiliser production through indigenous resources.
- India is going to commercially exploit and ramp up the production in the existing 30 lakh MT of Phosphorite deposits which are available in Rajasthan, central part of peninsular India, Hirapur(MP), Lalitpur(UP), Mussoorie syncline, Cuddapah basin(AP).
- Discussion and planning with Department of Mining and Geological Survey of


India is going on to expedite the exploration in the potential potassic ore resources in Rajasthan’s Satipura, Bharusari & Lakhasar and Uttar Pradesh, Madhya Pradesh, Rajasthan, Gujarat, Andhra Pradesh & Karnataka.

- The Action Plan included the steps to minimize the import dependency of costly raw material imported from abroad and make it accessible and affordable to farmers.
- Rock Phosphate is the key raw material for DAP and NPK fertilisers and India is 90% dependent on imports.
- Volatility in international prices affects domestic prices of fertilisers and hinders the progress and development of agriculture sector in the country.

Fertilizer Industry in India

CCEA approved the proposal to hike subsidy rates for Phosphorus and Potassium based fertilizers

- The Cabinet Committee on Economic Affairs has approved the proposal to hike subsidy rates for phosphorus and potassium-based fertilizers by 140% in a bid to provide relief to farmers as the kharif sowing season begins.
- The estimated additional subsidy burden is around ₹14,775 crore, with the Centre emphasising that this is a one-time measure as part of COVID-19 relief.
- Unlike urea, where the Centre sets a fixed maximum retail price, non-urea fertilizer prices are decontrolled, with the Centre fixing nutrient-based subsidy rates.
- So far, a 50 kg bag of di-ammonium phosphate (DAP), the fertilizer most popular with Indian farmers after urea, was sold at ₹1,200, including a subsidy of about ₹500.
- However, the bull run in the global commodity markets has seen a surge in prices of the imported raw materials as well as the finished fertilizer. In early April, a number of Indian fertilizer companies hiked their DAP prices to ₹1,900 per bag.
- Farmers’ groups protested against the ₹700/bag hike, pointing out that their input costs for the kharif season would spiral out of control.

Fertilizer Industry in India

- It is 1 of the 8 core industries. Fertilizer has the minimum share in Index of Core Industries.
- India is the 2nd largest consumer of Urea fertilizers after China. India also ranks 2nd in the production of nitrogenous fertilizers and 3rd in...
phosphatic fertilizers. Potash requirement is met through imports since we have limited reserves of potash. There are 2 types of Fertilizers
1. **Primary Fertilizers:** classified on the basis of nutrients they supply to soil like **N:P:K**:
   1. Nitrogenous (Urea),
   2. Phosphatic (di-ammonium phosphate - DAP) and
   3. Potassic (muriate of potash (MOP) fertilizers.
2. **Secondary Fertilizers** includes Calcium, Magnesium and Sulphur.
3. **Micronutrients** include Iron, Zinc, Boron, Chloride etc.

- **Fertilizer subsidy** (Food > Fertilizer > Petroleum > Interest payments)
  1. Earlier no Fertilizer subsidy was paid till 1977. Oil crisis of 1973 led to increase in Fertilizer prices leading to a decline in consumption and an increase in food prices. In 1977, Govt subsidized manufacturers.
  2. After 1991 crisis, Govt decontrolled the import of Phosphate and Potash but Urea imports is restricted.

**Urea Production and Pricing mechanism**

- **Urea** is the source of Nitrogenous fertilizer and it is heavily subsidized by Center. Today Urea is the only fertilizer which remains controlled.
- **CCEA approved continuation of Urea Subsidy Scheme upto 2020**
  1. It is a part of Central Sector Scheme. Urea price will be same till 2020.
  2. Now DBT Scheme is approved for fertilizer subsidy to urea manufacturers and importers. It also includes imported Urea subsidy which is directed towards import to bridge the gap between demand and indigenous production of urea. It also includes freight subsidy for movement of urea.
  3. Benefits
    1. DBT will ensure timely payment of subsidy to urea manufacturers. Fertilizer Co. leading to timely availability of urea to farmers.
    2. This will reduce the leakage of fertilizer subsidy and black marketing.
    3. Ceiling might be put to reduce the overuse of Nitrogenous fertilizers.
  4. **Subsidy to Fertilizer manufacturer/ importer** = Farm Gate price - MRP paid by Farmers.

- **New Urea Policy of 2015** (till 2019-20)
  1. With the objective of maximizing indigenous urea production, promoting energy efficiency in urea production and rationalize
subsidy.
2. It is applicable to existing 25 gas based units.
3. It ensures timely payment to urea manufacturers resulting in timely availability of urea to farmers.
   • Urea is given at Statutorily controlled price = Rs. 5360/ MT. Other charges for Neem coating.
   • Center plans to ease control on the retail prices of Urea and wants to make it more targeted.
   • Earlier Mandatory Neem coated urea production was done to slow down the dissolution of nitrogen into soil, resulting into less nutrient requirement.
   • Govt is also planning over fixing a Nutrient Based Subsidy (NBS) rate for Urea to promote balanced use of fertilizers and bring efficiency in industry.

CCEA approved continuation of Nutrient Based Subsidy scheme till 2020

• Under this scheme a fixed amount of subsidy decided on annual basis, is provided to fertilizer companies (other than Urea) depending on its nutrient content. It is applicable to 22 fertilizers (other than Urea).
• Govt announces a fixed rate of subsidy on each nutrient of subsidized Nitrogen, Phosphate, Potash and Sulphur fertilizers. MRP is decided by considering international and domestic prices of P&K fertilizers, exchange rate and inventory level in the country.

Infrastructure

• Fertilizer Corporation of India Limited: has 4 units at Sindri (Jharkhand); Gorakhpur (UP); Ramagundam (AP) and Talcher (Odisha) and Korbe (Chattisgarh).
• Hindustan Fertilizer Corporation Limited: at Barauni (Bihar); Durgapur (WB) and Namrup (Assam).
• Rashtriya Chemicals and Fertilizers Limited, Trombay.
• National Fertilizers Limited at Bhatinda (Punjab) and Panipat (Haryana).

Source: PIB
Q. Why does a virus mutate?

- Virus by its very nature mutates. It is part of its evolution.
- The SARS-Cov-2 virus is a single-stranded RNA virus. So, changes in the genetic sequence of the RNA are mutations.
- The moment a virus enters its host cell or a susceptible body, it starts replicating.
- When the spread of infection increases, the rate of replication also increases. A virus that has got a mutation in it is known as a variant.

Q. What is the impact of mutations?

- The normal process of mutations begins to impact us when it leads to changes in transmission levels or on treatment. Mutations can have positive, negative or neutral effects on human health.
- Negative impacts include clustering of infections, increased transmissibility, ability to escape immunity and infect someone who has prior immunity, neutralization escape from monoclonal antibodies, improved binding to lung cells and increased severity of infection.
- Positive impacts can be that the virus becomes non-viable.

Q. Why are frequent mutations seen in SARS-CoV-2 virus? When will the mutations stop?

SARS-CoV-2 can mutate due to the following reasons:

- Random error during replication of virus
- Immune pressure faced by viruses after treatments such as convalescent plasma, vaccination or monoclonal antibodies (antibodies produced by a single clone of cells with identical antibody molecules)
- Uninterrupted transmission due to lack of COVID-appropriate behaviour. Here the virus finds excellent host to grow and becomes more fit and more transmissible.
- The virus will continue to mutate as long as the pandemic remains. This makes it all the more crucial to follow COVID appropriate behavior.

Q. What are Variants of Interest (VoI) and Variants of Concern
When the mutations happen – if there is any previous association with any other similar variant which is felt to have an impact on public health – then it becomes a Variant under Investigation.

Once genetic markers are identified which can have association with receptor binding domain or which have an implication on antibodies or neutralizing assays, we start calling them as Variants of Interest.

The moment we get evidence for increased transmission through field-site and clinical correlations, it becomes a Variant of Concern. Variants of concern are those that have one or more of the following characteristics:

- Increased transmissibility
- Change in virulence/ disease presentation
- Evading the diagnostics, drugs and vaccines

The 1st Variant of Concern was announced by the UK where it was found. Currently there are four variants of concern identified by the scientists - Alpha, Beta, Gamma and Delta.

Q. What are Delta and Delta Plus variants?

- These are the names given to variants of SARS-CoV-2 virus, based on the mutations found in them. WHO has recommended using letters of the Greek Alphabet, i.e., Alpha (B.1.1.7), Beta (B.1.351), Gamma (P.1), Delta (B.1.617), etc., to denote variants, for easier public understanding.
- Delta variant, also known as SARS-CoV-2 B.1.617, has about 15-17 mutations. It was first reported in October 2020. More than 60% of cases in Maharashtra in February 2021 pertained to delta variants.
- It is the Indian scientists who identified the Delta Variant and submitted it to the global database. Delta variant is classified as a Variant of Concern and has now spread to 80 countries, as per WHO.
- Delta variant (B.1.617) has three subtypes B1.617.1, B.1617.2 and B.1.617.3, among which B.1.617.1 and B.1.617.3 have been classified as Variant of Interest, while B.1.617.2 (Delta Plus) has been classified as a Variant of Concern.
- The Delta Plus variant has an additional mutation in comparison to Delta variant; this mutation has been named as the K417N mutation. ‘Plus’ means an additional mutation has happened to the Delta variant. It does not mean that the Delta Plus variant is more severe or highly transmissible than the Delta variant.
Q. Why has the Delta Plus Variant (B.1.617.2) been classified as a Variant of Concern?

The Delta Plus variant has been classified as Variant of Concern because of the following characteristics:

- Increased transmissibility
- Stronger binding to receptors of lung cells
- Potential reduction in monoclonal antibody response
- Potential post vaccination immune escape

Q. How often are these mutations studied in India?

- Indian SARS-CoV-2 Genomics Consortium (INSACOG) coordinated by the Department of Biotechnology (DBT) along with Union Health Ministry, ICMR, and CSIR monitor the genomic variations in the SARS-CoV-2 on a regular basis through a pan India multi-laboratory network. It was set up with 10 National Labs in December 2020 and has been expanded to 28 labs and 300 sentinel sites from where genomic samples are collected. The INSACOG hospital network looks at samples and informs INSACOG about the severity, clinical correlation, breakthrough infections and re-infections.
- More than 65,000 samples have been taken from states and processed, while nearly 50,000 samples have been analysed of which 50% have been reported to be Variants of Concern.

Q. On what basis are the samples subjected to Genome Sequencing?

Sample selection is done under three broad categories:

- International passengers (during the beginning of the Pandemic)
- Community surveillance (where RT-PCR samples report CT Value less than 25)
- Sentinel surveillance - Samples are obtained from labs (to check transmission) and hospitals (to check severity)

When there is any public health impact noticed because of genetic mutation, then the same is monitored.

Q. What is the trend of Variants of Concern circulating in India?

As per the latest data, 90% of samples tested have been found to have Delta
Q. Why public health action is not taken immediately after noticing mutations in virus?

- It is not possible to say whether the mutations noticed will increase transmission. Also, until there is scientific evidence that proves a correlation between rising number of cases and variant proportion, we cannot confirm there is a surge in the particular variant. Once mutations are found, analysis is made week on week to find if there is any such correlation between the surge of cases and variant proportion. Public health action can be taken only after scientific proofs for such correlation are available.
- Once such correlation is established, this will help greatly to prepare in advance when such variant is seen in another area/region.

Q. Do COVISHIELD and COVAXIN work against the variants of SARS-CoV-2?

- Yes, COVISHIELD and COVAXIN are both effective against the Alpha, Beta, Gamma and Delta variants. Lab tests to check vaccine effectiveness on Delta Plus Variant are ongoing.
- Delta Plus Variants: The virus has been isolated and is being cultured now at ICMR’s National Institute of Virology, Pune. Laboratory tests to check vaccine effectiveness are ongoing and the results will be available in 7 to 10 days. This will be the first result in the world.

Q. What are the public health interventions being carried out to tackle these variants?

The public health interventions needed are the same, irrespective of the variants. The following measures are being taken:

- Cluster containment
- Isolation & Treatment of cases
- Quarantining of contacts
- Ramping up vaccination
Q. Do public health strategies change as the virus mutates and more variants arise?

No, public health prevention strategies do not change with variants.

Q. Why is continuous monitoring of mutations important?

Continuous monitoring of mutations is important to track potential vaccine escape, increased transmissibility and disease severity.

Q. What does a common man do to protect him/her from these Variants of Concern?

- One must follow COVID Appropriate Behaviour, which includes wearing a mask properly, washing hands frequently and maintaining social distancing.
- The second wave is not over yet. It is possible to prevent a big third wave provided individuals and society practise protective behaviour.
- Further, Test Positivity Rate must be closely monitored by each district. If the test positivity goes above 5%, strict restrictions must be imposed.

Source: PIB

India™s Merchandise Trade Data

India’s Merchandise Trade Data, May 2021

India’s merchandise exports in May 2021 was USD 32.21 billion, an increase of 67.39% over May 2020 and an increase of 7.93% over May 2019

- India’s egg merchandise imports in May 2021 was USD 38.53 billion, an increase of 68.54% over May 2020 and a decline of 17.47% over May 2019
- Value of non-petroleum and non-gems and jewellery exports in May 2021 was USD 23.97 billion, a positive growth of 45.96% over May 2020 and a positive growth of 11.51% over May 2019
Non-oil, non-GJ imports was USD 26.14 billion in May 2021, a positive growth of 41.32% over May 2020 and a negative growth of 4.08% over May 2019.

Top 5 commodity groups of export which have recorded positive growth during May 2021 vis-à-vis May 2020 are: Other Cereals, Jute mfg. including Floor Covering, Petroleum Products, Handicrafts excl. Handmade Carpet, and Gems and Jewellery (179.16%)

Top 5 commodity groups of export which have recorded positive growth during May 2021 vis-à-vis May 2019 are: Other Cereals, Iron Ore, Cereal Preparations And Miscellaneous Processed Item, Cotton yarn/fabs./madeups, handloom products etc, and Jute mfg.

Top 5 commodity groups of import which have shown a fall in May 2021 vis-à-vis May 2020 are: Silver, Newsprint, Pulses, Transport equipment, and Iron & Steel.

Top 5 commodity groups of import which have shown a fall in May 2021 vis-à-vis May 2019 are: Silver, Gold, Newsprint, Transport equipment, and Pulses.

Source: PIB
Legal provisions

- The Protection of Children from Sexual Offences (POCSO) Act was enacted in 2012 especially to protect children (aged less than 18) from sexual assault.
- Section 7 of the POCSO Act, inter alia, says that whoever with sexual intent touches the breast of the child is said to commit sexual assault.
- Whereas Section 8 of the Act provides minimum imprisonment of three years for sexual assault.
- Section 354 of the Indian Penal Code (IPC) lays down a minimum of one year imprisonment for outraging the modesty of a woman.

The POCSO Act, 2012

- Definitions:
  1. The Act defines a child as any person below eighteen years of age.
  2. It defines different forms of sexual abuse, including penetrative and non-penetrative assault, as well as sexual harassment and pornography.
  3. It deems a sexual assault to be “aggravated” under certain circumstances, such as when the abused child is mentally ill or when the abuse is committed by a person in a position of trust or authority like a family member, police officer, teacher, or doctor.
- The Protection of Children from Sexual Offences Act (POCSO Act) 2012 was formulated in order to effectively address sexual abuse and sexual exploitation of children.
- Role of police:
  1. The Act casts the police in the role of child protectors during the investigative process.
  2. Thus, the police personnel receiving a report of sexual abuse of a child are given the responsibility of making urgent arrangements for the care and protection of the child, such as obtaining emergency medical treatment for the child and placing the child in a shelter home, and bringing the matter in front of the Child Welfare Committee (CWC), should the need arise.
- Safeguards:
  1. The Act further makes provisions for avoiding the re-victimisation of the child.
2. It provides for special courts that conduct the trial in-camera and without revealing the identity of the child, in a manner that is as child-friendly as possible.

3. Hence, the child may have a parent or other trusted person present at the time of testifying and can call for assistance from an interpreter, special educator, or other professional while giving evidence.

**IPC and POCSO: Differences**

- The definition of ‘assault or criminal force to woman with intent to outrage her modesty’ given in the IPC is generic whereas in POCSO, the acts of sexual assault are explicitly mentioned such as touching various private parts or doing any other act which involves physical contact without penetration.
- ‘Sexual assault’ in POCSO specifically excludes rape which requires penetration; otherwise the scope of ‘sexual assault’ under POCSO and ‘outraging modesty of a woman’ under the IPC is the same.
- Whereas the IPC provides punishment for the offence irrespective of any age of the victim, POCSO is specific for the protection of children.
- Higher punishment is provided under POCSO not because more ‘serious allegations’ of sexual assault are required but because the legislature wanted punishment to be more deterrent if the victims are children.
- Therefore, once the act of ‘outraging modesty with the use of assault or criminal force’, which is nothing but ‘sexual assault’, is proved, the requisite punishment must be slapped under POCSO if the victim is a child.

**Important Judgements**

- In Vishaka v. State of Rajasthan (1997), the Supreme Court held that the offence relating to modesty of woman cannot be treated as trivial.
- In Pappu v. State of Chhattisgarh (2015), the High Court of Chhattisgarh, though it acquitted the accused under Section 354 of the IPC as the offence was found lacking in use of ‘criminal force or assault’, convicted him for sexual harassment under Section 354A which requires ‘physical contact’ and advances as a necessary element.
  - This case also pertained to squeezing the limbs and breasts of a 13-year-old girl but the High Court did not venture into the area of skin-to-skin contact.

**Global examples**
The POCSO (Amendment) Act, 2019

- The act aims at making offences against children gender-neutral.
- The definition of ‘Sexual Assault’ has been extended to incorporate administration of hormones or chemical substances to children to attain early sexual maturity for the purpose of penetrative sexual assault.
- The Act defines child pornography as any visual depiction of sexually explicit conduct involving a child including photograph, video, digital or computer generated image indistinguishable from an actual child.
- The amendments also penalize the transmitting of pornographic material to children and propose to synchronise it with the Information Technology Act.
- The Act seeks to enhance punishment for sexual offences against children, with a provision of death penalty.
- According to the amendment act, those committing penetrative sexual assaults on a child below 16 years of age would be punished with imprisonment up to 20 years, which might extend to life imprisonment as well as fine.
- In case of aggravated penetrative sexual assault, the act increases the minimum punishment from ten years to 20 years, and the maximum punishment to death penalty.
- To curb child pornography, the Act provides that those who use a child for pornographic purposes should be punished with imprisonment up to five years and fine.
- However, in the event of a second or subsequent conviction, the punishment would be up to seven years and fine.
- The government has also sanctioned over one thousand fast track courts for speedy disposal of pending cases under POCSO.

Child Pornography

- The new act defines child pornography as: “any visual depiction of sexually explicit conduct involving a child which includes a
photograph, video, digital or computer-generated image (that is) indistinguishable from an actual child.”

- Additionally, “an image created, adapted, modified” to depict a child would also be treated as child pornography. This would also include cartoons, animated pictures, etc.
- The Cabinet has also enhanced the fine for possessing child porn but not deleting or reporting it to 5,000 from the earlier proposal of Rs. 1,000. If a person stores such content for distributing it further, except for when presenting it in court as evidence, he could face a punishment of up to three years.
- Henceforth, there will be zero tolerance for child pornography.
- Some of these provisions were also contained in the Protection of Children from Sexual Offences (POCSO) Amendment Act, 2019, but lapsed.

Significance of POCSO Amendment Act 2019

- The amendment is expected to discourage the trend of child sexual abuse by acting as a deterrent due to strong penal provisions incorporated in the Act.
- It intends to protect the interest of vulnerable children in times of distress and ensures their safety and dignity.
- The amendment is aimed to establish clarity regarding the aspects of child abuse and punishment thereof.
- It is gender-neutral and thus looks into the sexual assault of both minor boys and girls.

Introduction of Death Penalty

- The bill seeks for the death penalty for aggravated sexual assault on children to create deterrent effect.
- It refers to the judgments of the Supreme Court in Machhi Singh (1983) and Devender Pal Singh (2002) in which the court had held that the death penalty can be awarded only in the rarest of rare cases.

Concerns over death penalty

- Often, the perpetrators of abuse are family members and having such penalty may discourage the registration of the crime itself. Also, it may threaten the life of the minor as the maximum punishment for murder is also the death sentence.
The Justice J.S. Verma Committee, which was constituted in 2013 in the aftermath of the Nirbhaya case, after due deliberations found itself against the imposition of death penalty in rape cases. The 262nd Report of the Law Commission of India, 2015, also provides for abolition of the death penalty except in terror cases.

Other Concerns

- According to the National Crime Records Bureau (NCRB) data of 2016, the conviction rate in POCSO cases is 29.6% while pendency is as high as 89%. The prescribed time period of two months for trial in such cases is hardly complied with.
- As per the NCRB data of 2016, less than three per cent of child rape cases that came up before the courts ended in convictions.

Problems

- The introduction of the death penalty may backfire in cases of child sexual abuse and even have a catastrophic effect. Often, perpetrators of abuse are family members and having such penalties may discourage the registration of the crime itself.
- It may threaten the life of the minor as the maximum punishment for murder is also the death sentence.
- Justice J.S. Verma Committee was against the imposition of the death penalty in rape cases. The 262nd Report of the Law Commission of India also provides for the abolition of the death penalty except in terror cases.
- The death penalty diverts attention from the core issues of infrastructural apathy, procedural lapses and trial delays.
- It is the certainty of punishment rather than its severity which has deterrence in real sense.
- Even a year-and-a-half after the passage of the Criminal Law (Amendment) Bill, 2018, which introduced the death penalty for rape of a minor girl, such incidents have not been under check.
- Robin Conley in his book, Confronting the Death Penalty, has observed that the death penalty may seem just and appropriate in abstract but once analysed, it is less appealing practically.
- Deterrence has to be supplemented by exhaustive measures including an overhaul of the criminal justice administration.
- As per Supreme court data, 24,212 FIRs were filed across India this year. According to NCRB data of 2016, the conviction rate in POCSO cases is 29.6% while pendency is as high as 89%. The prescribed time period of two
months for trial in such cases is hardly complied with.
- Supreme court has recently directed the Central Government to set up special courts in each district having more than 100 pending cases under the Act.

Way Forward

- Problems related to implementation of POCSO Act such as lack of adequate special courts, lack of sensitization for investigators and prosecutors in dealing with child victims, poor rate of convictions etc. need to be resolved urgently.
- The Supreme Court direction to set up special courts within 60 days of the order in each district having more than 100 pending cases under the act must be complied with urgently.
- The provision of death penalty should be widely discussed and debated and should be used only for the rarest of the rare cases.
- Awareness and sensitization of people is equally important to prevent the crime itself.
- Massive awareness should be created among the masses about child’s dignity and about the law in place.
- POSCO Act needs to be part of school syllabus.
- Along with fast track courts, proper infrastructure and judges capacity should be looked upon.
- Need of ground level work.
- Speedy delivery of justice.
- Proper police training and a dedicated children cell at stations as that of a women cell.
- Need of accountability at each and every level.
- Many Indians men and women refuse to believe that sexual violence is a serious problem eating away at India’s vitals. It is essential to recognise that the crisis lies in the precise manner in which the existing criminal justice system unfolds.
- Instant medical relief and compensations should be provided to the victim.
- Children should be given a platform and proper environment to speak against such abuse.

Dedicated special court by POCSO

- The Supreme Court on Thursday directed the Centre to set up a dedicated special court in every district which has over 100 cases under Protection of Children from Sexual Offences (POCSO)
The apex court gave this mandate with a deadline of 60 days, as it was concerned about the slow pace at which child sexual abuse cases are being dealt with.
A bench of Chief Justice of India Ranjan Gogoi, Justice Deepak Gupta and Justice Aniruddha Bose made these statements when they learnt that 1.5 lakh POCSO cases were pending in 670 designated courts.
Quoting available data, the court pointed out that only 3% victims in POCSO cases received compensation in 2015, and the number increased to only 4% and 5% in 2016 and 2017 respectively.
Per this data, a judge on an average has to go decide on 224 cases. To address this, the apex court asked for the Centre to set up special courts, which should be funded by the Centre as well.

Guidelines by the SC for Setting up of special courts:
- Such courts will be funded by the central government. The fund will not only take care of the appointment of the presiding officer but also appointments of support persons, special public prosecutors, court staff and infrastructure, including creation of child friendly environment and vulnerable witness court rooms.
- Awareness: WCD ministry shall facilitate screening of ‘short clips intended to spread awareness of the subject in general, namely, prevention of child abuse and prosecution of crimes against children, in every movie hall and could also be transmitted by various television channels at regular intervals.’

National Commission for protection of Child Rights, 2005

1. It is a Statutory Body. NCPCR has given the definition of child to be less than 18 years.
2. NCPCR can take up suo-motu cases.
3. Mandate: To ensure that all Laws, Policies, Programmes, and Administrative Mechanisms are in consonance with the Child Rights given in Constitution and UN Convention on Rights of Child.
4. NCPCR had asked to form special cells in schools to solve

- pending.

- A bench of Chief Justice of India Ranjan Gogoi, Justice Deepak Gupta and Justice Aniruddha Bose made these statements when they learnt that 1.5 lakh POCSO cases were pending in 670 designated courts.
- Quoting available data, the court pointed out that only 3% victims in POCSO cases received compensation in 2015, and the number increased to only 4% and 5% in 2016 and 2017 respectively.
- Per this data, a judge on an average has to go decide on 224 cases. To address this, the apex court asked for the Centre to set up special courts, which should be funded by the Centre as well.

Guidelines by the SC for Setting up of special courts:

- Such courts will be funded by the central government. The fund will not only take care of the appointment of the presiding officer but also appointments of support persons, special public prosecutors, court staff and infrastructure, including creation of child friendly environment and vulnerable witness court rooms.
- Awareness: WCD ministry shall facilitate screening of ‘short clips intended to spread awareness of the subject in general, namely, prevention of child abuse and prosecution of crimes against children, in every movie hall and could also be transmitted by various television channels at regular intervals.’

National Commission for protection of Child Rights, 2005

1. It is a Statutory Body. NCPCR has given the definition of child to be less than 18 years.
2. NCPCR can take up suo-motu cases.
3. Mandate: To ensure that all Laws, Policies, Programmes, and Administrative Mechanisms are in consonance with the Child Rights given in Constitution and UN Convention on Rights of Child.
4. NCPCR had asked to form special cells in schools to solve
problems of children. The cell will examine the **mental & physical torture** against children. Complainsts regarding sexual harassment, mental harassment, favouritism etc. should be informed to the **Taluk/District Legal Services Authority within 48 hours**.

5. It is the nodal body for **Right to Education and Child abuse**.

Main Recommendations of NCPCR:

1. **Seminars** should be conducted for teachers to improve their teaching styles.
2. The **dignity** of a student should be accepted by everyone.
3. **Drug addiction, copying, violence** etc. should be curtailed.
4. **State Commissions** of Protection of Child Rights should be established.

Source: TH

---

**Glacial Lake Atlas of Ganga River Basin released**

**GS-I | 30 June, 2021**

The present glacial lake atlas is based on the inventoried glacial lakes in part of Ganga River basin from its origin to foothills of Himalayas covering a catchment area of 2,47,109 sq. km.

- The study portion of Ganga River basin covers part of India and transboundary region.
- This is an initiative under NHP, a **Central Sector Scheme** implemented by Department of Water Resources, River Development & Ganga Rejuvenation (DOWR, RD & GR).
The National Hydrology Project or NHP-Bhuvan Portal is a repository of information on the initiatives undertaken by NRSC under NHP with a facility to download the reports and knowledge products being developed by NRSC. Link for the portal: [https://bhuvan.nrsc.gov.in/nhp/](https://bhuvan.nrsc.gov.in/nhp/)

National Remote Sensing Centre (NRSC), Indian Space Research Organization (ISRO), Hyderabad as one of the Implementing Agency under the National Hydrology Project (NHP), is carrying out hydrological studies using satellite data and geospatial techniques.

As a part of the responsibilities entrusted to NRSC under NHP, detailed glacial lake inventory, prioritization for Glacial Lake Outburst Flood (GLOF) risk, and simulation of GLOF for selected lakes have been taken up for all the catchments of Indian Himalayan Rivers.

Under this activity, an updated inventory of glacial lakes using high resolution satellite data was prepared for the Indus River basin and published in December 2020, and currently an updated inventory of glacial lakes has been prepared for the Ganga River basin.

In the present study, glacial lakes with water spread area greater than 0.25 ha have been mapped using Resourcesat-2 (RS-2) Linear Imaging Self Scanning Sensor-IV (LISS-IV) satellite data using visual interpretation techniques.

A total of 4,707 glacial lakes have been mapped in the Ganga River basin with a total lake water spread area of 20,685 ha.

**Benefits of Glacial Lake Atlas**

- The possible uses of the Glacial Lake Atlas for the water resources professionals, researchers, disaster management authorities and other stakeholders for managing the glacial lakes as well as to mitigate the possible adverse impacts of Glacial Lake Outburst Floods (GLOF) and climate change.
- The atlas provides a comprehensive and systematic glacial lake database for Ganga River basin with size > 0.25 ha
- In the context of climate change impact analysis, the atlas can be used as reference data for carrying out change analysis, both with respect to historical and future time periods
- The atlas also provides authentic database for regular or periodic monitoring changes in spatial extent (expansion/shrinkage), and formation of new lakes
- The atlas can also be used in conjunction with glacier information for their retreat and climate impact studies.
- The information on glacial lakes like their type, hydrological, topographical,
and associated glaciers are useful in identifying the potential critical glacial lakes and consequent GLOF risk.

- Central and State Disaster Management Authorities can make use of the atlas for disaster mitigation planning and related program.

Source: PIB

Pilot Scheme on Fortification of Rice & its distribution under PDS
GS-III | 30 June, 2021

Pilot Scheme on Fortification of Rice & its distribution under PDS

- To address anemia and micro-nutrient deficiency in the country, Centre has expedited capacity of the fortification of rice to increase from 15,000 MT to 3.5 lakh MT by incentivising and creating awareness among rice millers.
- This scheme is for a period of 3 years beginning in 2019-20 with total outlay of Rs 174.64 Crore.
- NITI Aayog also in its “Strategy for new INDIA @75” has put suggested a mandatory fortification of staples and to incorporate fortified food-grains in Government programmes, TPDS (NFSA) ICDS, Mid-day Meal Scheme (MDM) etc.
- The Department of Food & Public Distribution along with Food Corporation of India started distributing Fortified Rice under ICDS/MDM from April, 2021. FCI has procured nearly 6.07 LMT of Fortified rice (FCI & DCP) so far all over the country to distribute under ICDS/MDM in the States/UTs. A proposal of further scaling up of rice fortification is under process.
- Expediting the fortification of rice to increase the capacity from 15,000 MT to 3.5 lakh MT by incentivizing and creating awareness among rice millers.
- Presently, there is no scheme available for connecting rice millers with banks.
- The Centrally Sponsored Pilot Scheme on "Fortification of Rice & its Distribution under Public Distribution System currently implemented in 6 States, - Andhra Pradesh, Gujarat, Maharashtra, Tamil Nadu, Chhattisgarh
and Uttar Pradesh have started the distribution of fortified rice under pilot scheme.

- The State of Kerala and Odisha are likely to start the distribution shortly.
- Approximately 1.73 Lakh MT of fortified rice is distributed till May, 2021 under the pilot scheme.
- Fortification of rice is a cost-effective and complementary strategy to increase vitamin and mineral content in diets and a step towards nutritional security and to fight anemia and malnutrition in the country. This strategy has a proven track record across many geographies in the world.
- It may be noted that in India, 58.5% of young children aged 6-59 months, 53% of women within the reproductive age group and 22.7% of all men aged 15-49 years of age suffer from anemia.

Source: PIB

COVID and Malnourishment

COVID and Malnourishment

GS-III | 30 June, 2021

COVID and Malnourishment

- The pandemic has worsened the problem of Malnutrition.
- While malnutrition already remains as the predominant risk factor for child deaths and total disability-adjusted life years (DALY), the COVID-19 has pushed back our efforts on ending malnutrition, which plagues India’s children.
- There is a real risk that, as nations strive to control the virus, the gains made in reducing hunger and malnutrition will be lost. The need for more equitable, resilient and sustainable food and health systems has never been more urgent.

What is Malnutrition?

Malnutrition refers to deficiencies, excesses or imbalances in a person’s intake of energy and/or nutrients. The term malnutrition addresses 3 broad groups of conditions:

1. Undernutrition, which includes wasting (low weight-for-height),
stunting (low height-for-age) and underweight (low weight-for-age).

2. **Micronutrient-related malnutrition**, which includes **micronutrient deficiencies** (a lack of important vitamins and minerals) or micronutrient excess;

3. **Overweight**, obesity and diet-related non-communicable diseases (such as heart disease, stroke, diabetes and some cancers).

Globally, at least 1 in 3 children under 5 is undernourished or overweight and at least 1 in 2 children suffer from hidden hunger.

---

**Malnutrition and Undernutrition**

- Malnutrition refers to deficiencies, excesses or imbalances in a person’s intake of energy and/or nutrients.
- The term malnutrition covers two broad groups of conditions:
  - Undernutrition—which includes stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies (a lack of important vitamins and minerals).
  - Obesity—which includes overweight and diet-related noncommunicable diseases (such as heart disease, stroke, diabetes, and cancer).

---

- Hidden hunger is a **lack of vitamins and minerals**.
- It occurs when the **quality of food people eat does not meet the nutrient requirements**.
- The food is **deficient in micronutrients** such as the vitamins and minerals that are needed for their growth and development.

**Causes of Malnutrition**

- **Food & nutrition insecurity**: Increased food and nutrition insecurity has severely weakened the immune system of people contributing to poor growth & intellectual impairment and has lowered human capital and development prospects
- **Inequity**: Inequity is a cause of malnutrition — both under-nutrition and overweight, obesity and other diet-related chronic diseases.
- **Inadequate Dietary Intake**: Inadequate dietary intake and disease are directly responsible for undernutrition, but multiple indirect determinants exacerbate these causes.
**Major causes:**
- Food insecurity
- Inadequate childcare practices
- Low maternal education
- Poor access to health services
- Lack of access to clean water and sanitation
- Poor hygiene practices

**Covid-19 and Malnutrition**

- The nationwide lockdown has disrupted access to essential services, including Mid-Day Meals, which are not only a nutritional measure to supplement some portion of a child’s calorie needs but is also a tool to access education.
- Through a concurrent rapid needs assessment, Save the Children found that around 40% of eligible children have not received mid-day meal during the lockdown.

**India’s position**

- **Global Nutrition Report-2020:** As per the Global Nutrition Report 2020, India is among 88 countries that are likely to miss global nutrition targets by 2025.
- **Malnourished children in India:** Malnutrition in India accounts for 68% of total under-five deaths and 17% of the total disability-adjusted life years.
- **India is home to about 30% of the world’s stunted children and nearly 50 per cent of severely wasted children under the age of five.**

**Other data**

- **FAO estimates:** The Food and Agriculture Organization (FAO) estimates that 194.4 million people in India (about 14.5% of the total population) are undernourished.
- **Global Hunger Index-2019:** India ranks 102 out of 117 countries in the Global Hunger Index 2019.
- **Wasting rate:** India’s wasting rate is extremely high at 20.8% — the highest wasting rate of any country.
- **Nutrition interventions:** They are not sufficient to tackle the problem of undernutrition: Even at 90% coverage, the core set of proven nutrition-specific interventions would only decrease stunting by 20 per cent.
- **Covid-19:** Covid-19 has posed serious threats to children and their health and nutritional rights.
- **According to recent estimates, even in the best possible scenario and**
accounting for changes in the provision of essential health and nutrition services due to COVID-19, India could have around additional 60,000 child deaths (around 3,00,000 in the worst-case scenario) in the next six months.

Measures Taken

- **World Food Day**: it is observed annually on October 16 to address the problem of global hunger.
- **POSHAN Abhiyaan**: The government of India had launched the National Nutrition Mission (NNM) or POSHAN Abhiyaan to ensure a “Malnutrition Free India” by 2022.
- **Anaemia Mukt Bharat Abhiyan**: Launched in 2018, the mission aims at accelerating the annual rate of decline of anaemia from one to three percentage points.
- **Mid-day Meal (MDM) scheme**: aims to improve nutritional levels among school children which also has a direct and positive impact on enrolment, retention and attendance in schools.
- **The National Food Security Act (NFSA), 2013**: aims to ensure food and nutrition security for the most vulnerable through its associated schemes and programmes, making access to food a legal right.
- **Pradhan Mantri Matru Vandana Yojana (PMMVY)**: Rs.6,000 is transferred directly to the bank accounts of pregnant women for availing better facilities for their delivery.
- **Integrated Child Development Services (ICDS) Scheme**: launched in 1975, the scheme aims at providing food, preschool education, primary healthcare, immunization, health check-up and referral services to children under 6 years of age and their mothers.

Way forward

- There is a need to explore possible solutions and put forward key policy and programme proposals for the integrated management of acute malnutrition and mitigating the impact of Covid-19.
- For easy and sustained access to nutritious food, the spotlight back should be brought back on locally-available, low-cost nutritious food.
- More encouragement should be given to maternal, infant and young child nutrition actions.
- Strategies like ‘take-home ration’ and ‘mid-day meal service’ to ensure the continuation of services and coverage of the most vulnerable communities, especially in urban areas. Child-sensitive social protection schemes, like Pradhan Mantri Matru Vandana Yojna (PMMVY), need to be implemented in
Strict measures are needed to ensure that the Public Distribution System (PDS) is accessible to all, especially the vulnerable population. The use of newer technologies in service delivery, data management, evidence generation and real-time monitoring should be encouraged for maximum use in these processes.

Electoral Bonds Scheme

As per the scheme, Electoral bonds means a bond issued in the nature of promissory note which is a bearer banking instrument not carrying the name of buyer or payee. They are used for making donations to political parties. Govt launched it on 2 Jan, 2018.

They are issued by Scheduled Commercial Banks upon authorisation from Central Govt (not RBI) to donor, but only against cheque and digital payments (not cash). They are redeemable in a registered political party.

Amendments to RBI Act, 1934 and RPA, 1951 was made through Finance Bill, 2017.

It is an interest free banking instrument issued on a non refundable basis and are not available for trading. Further, no loan would be provided against these bonds. Purchases needs to have fulfilled KYC norms.

Electoral Bonds would have a life of only 15 days during which it can be used for making donation only to the political parties registered under Section 29A of RPA, 1951. It will be encashed by them only through a designated bank account with the authorised bank.

No payment shall be made to any payee political party if the bond is deposited after the expiry of the validity period and the bond deposited by any political party to its account shall be credited on the same day.

The information furnished by the buyer shall be treated confidential. No commission, brokerage or any charges for the issue of bond shall be payable.
Maximum amount of cash donation that a political party can receive is stipulated at Rs. 2000/- from 1 person. Political parties are exempted from Income tax.

As per Section 29C (1) of RPA, 1951, the political party needs to disclose the details of Non governmental corporations and persons who donate > 20000 to it.

Issues:
1. Donors are left anonymous. So Electoral bonds cannot be identified or associated with any particular buyer or political party.
2. Election Commission argues that it does not allow to check violations of RPA.
3. Declaration of sources of funding for political parties is given in Section 29 of RPA, 1951. Before 2017, they had to declare all donations made > 20000 but now they are out of this purview.
5. Issue of corporate funding misuse to Political parties and lobbying.
6. Issue of favoring the ruling party. As in 2017-18, 94.6% of bonds given to BJP.
7. Foreign companies with a majority stake in Indian companies can invest in Electoral bonds. This allows unchecked foreign funding.

Benefits
1. It limits the use of cash in political funding.
2. It curbs Black money as the payments are made only by Cash, DD, NEFT, RTGS.
3. It protects donor from political victimization as they remain anonymous.

3 National Parties received 1931 crore in FY 19 through Electoral Bond scheme which allows anonymous donations to political parties. BJP got the highest. Both EC and RBI are against it.

For analysis on Electoral Bonds: click here

Source: PIB
Launched under the Aatmanirbhar Bharat Abhiyan, the Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME) Scheme is a centrally sponsored scheme that aims to enhance the competitiveness of existing individual micro-enterprises in the unorganized segment of the food processing industry and to promote formalization of the sector and provide support to Farmer Producer Organizations, Self Help Groups, and Producers Cooperatives along their entire value chain. With an outlay of Rs. 10,000 crore over a period of five years from 2020-21 to 2024-25, the scheme envisions to directly assist the 2,00,000 micro food processing units for providing financial, technical, and business support for upgradation of existing micro food processing enterprises. The Scheme is expected to generate a total investment of Rs. 35,000 crore and 9 lakh skilled and semi-skilled employment.

Features of PMFME

- **One District One Product (ODOP) Approach**:  
  1. The States would identify food products for districts keeping in view the existing clusters and availability of raw material.  
  2. The ODOP could be a perishable produce based or cereal based or a food item widely produced in an area. E.g. mango, potato, pickle, millet based products, fisheries, poultry, etc.  
- **Waste to wealth products, minor forest products and Aspirational Districts.**  
- **Capacity building and research**: Academic and research institutions under MoFPI along with State Level Technical Institutions would be provided support for training of units, product development, appropriate packaging and machinery for micro units.  
- **Financial Support**:  
  1. Existing individual micro food processing units desirous of upgrading their units can avail credit-linked capital subsidy at 35% of the eligible project cost with a maximum ceiling of Rs.10 lakh per unit.  
  2. Support would be provided through credit linked grants at 35% for development of common infrastructure including common processing facility, lab, warehouse, etc. through FPOs/SHGs/cooperatives or state owned agencies or private enterprise.  
  3. A seed capital (initial funding) of Rs. 40,000- per Self Help Group (SHG) member would be provided for working capital and purchase of small tools.
UPSC "PT" DNA (Daily News Analysis)

Source: PIB