

# Current Affairs

"A MONTHLY MAGAZINE FOR UPSC CIVIL SERVICES EXAMINATION"



**Air Pollution:**  
**A Silent**  
**Killer**

What are the 3 Farm Bills?  
Rationale and Challenges

Women in Research in India:  
What's stopping them?

Integrated Theatre Command:  
An Inevitable Necessity

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# MESSAGE TO THE READERS

**T**he November 2020 Issue of the Next IAS Current Affairs Magazine (hereafter called 'The Magazine'), covers news events from 26<sup>th</sup> September 2020 to 25<sup>th</sup> October 2020 (hereafter called 'Coverage Period'). The Magazine has comprehensive coverage of all the topics from current affairs neatly categorized into major sections like Economy, International Issues, Polity & Governance, and so on.

This issue of the magazine has an in-depth analysis of '**Air Pollution: A Silent Killer**' and '**What are the 3 Farm Bills? Rationale and Challenges**'.

The Magazine also covers the issues of '**Women in Research in India: What's stopping them?**', '**Integrated Theatre Command: An Inevitable Necessity**', '**Larger Role for India at the UN**' and many other issues which have become relevant in the coverage period.

The Magazine is designed for the needs of the students who are preparing for UPSC Civil Services Examinations. However, it is also helpful for Engineering Services Examinations, Banking Examinations and other government or Public Sector Enterprises examinations.

Any suggestion for further improvement of the Magazine is welcome and may be e-mailed to [currentaffairs@nextias.com](mailto:currentaffairs@nextias.com)

**Team NEXTIAS**

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# AIR POLLUTION: A SILENT KILLER

Scientists have developed a bio-decomposing technique called “Pusa Decomposers” for converting crop stubble into compost to tackle the air pollution problem.

## About:

- High levels of air pollution in Delhi is a year-round problem, which can be attributed to unfavorable meteorological conditions, stubble burning in neighboring regions and local sources of pollution.
- Recently, Chief Minister Arvind Kejriwal visited the Indian Agricultural Research Institute (IARI) to see the bio-decomposer technique of **converting crop stubble into compost**. This technique is called **Pusa Decomposer**.

## What is Pusa Decomposer?

- **Capsules:** The decomposers are in the form of capsules made by extracting fungi strains that help the paddy straw to decompose at a much faster rate than usual.
  - ♦ The fungi help to produce the essential enzymes for the degradation process.
- **Time for decomposition:** It takes around 20 days for the degradation process to be completed.
  - ♦ This is a great improvement as under natural circumstances, shredded and watered paddy straw, which is mixed with soil, takes at least 45 days to decompose.
  - ♦ PUSA decomposer's shorter decomposing time provides farmers enough time to prepare fields for the wheat crop on time.
- **Decomposing Liquid:** It involves making a liquid formulation using decomposer capsules fermenting it over 8-10 days and then spraying the mixture on fields with crop stubble to ensure speedy bio-decomposition of the stubble.
- **How much can be prepared:** The farmers can prepare 25 litre of liquid mixture with 4 capsules, jaggery and chickpea flour. The mixture is sufficient to cover 1 hectare of land.

## Significance of the Technology:

- It is cost effective, efficient, doable and practical way to stop stubble burning
- It helps in regenerating the fertility and productivity of soil as stubble itself works as manure and compost for the soil.

## AIR POLLUTION CRISIS IN INDIA:

- With every winter comes the news of elevated pollution levels in the national capital. The problem of pollution disrupts not only the NCR area but many other prominent urbane areas like Allahabad and Ludhiana. This article deals with the

various aspects of the problem and propose solutions for its resolution.

## What is Air Pollution?

- **Air pollution** is defined as the introduction of pollutants, organic molecules, or other unsafe materials into Earth's atmosphere.
- This can be in the form of excessive gases like carbon dioxide and other vapors that cannot be effectively removed through natural cycles, such as the carbon cycle or the nitrogen cycle.

## Types of Pollutants:

- **Primary Pollutants:** The pollutants that directly cause air pollution are known as primary pollutants.
- **Secondary Pollutants:** The pollutants formed by the intermingling and reaction of primary pollutants are known as secondary pollutants.

## Classification of Pollutants

Particulate Pollutants	Gaseous Pollutants
<ul style="list-style-type: none"> <li>• Lead</li> <li>• Fly Ash</li> <li>• Metallic Oxides</li> <li>• Nanoparticles</li> </ul>	<ul style="list-style-type: none"> <li>• Carbon Monoxide (CO)</li> <li>• Carbon Dioxide (CO<sub>2</sub>)</li> <li>• Chlorofluorocarbons (CFCs)</li> <li>• Ozone (O<sub>3</sub>)</li> <li>• Nitrogen Oxide (NO<sub>x</sub>)</li> <li>• Sulphur Dioxide (SO<sub>2</sub>)</li> <li>• Volatile Organic Compounds (VOCs)</li> <li>• Benzene</li> <li>• Ethylene</li> <li>• Biological pollutants</li> <li>• Asbestos</li> <li>• Radon</li> </ul>

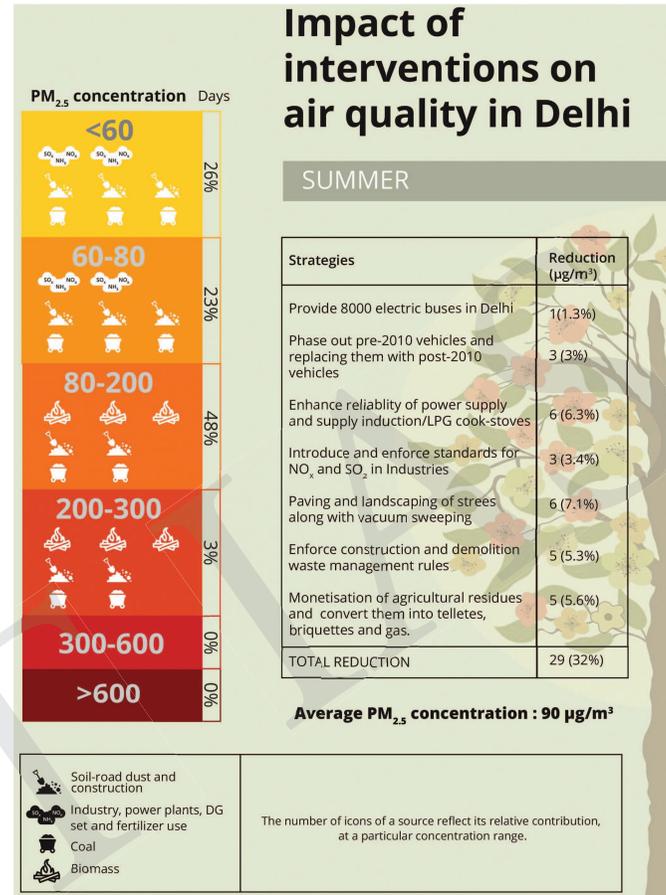
## Statistics about Air Pollution in India:

- India accounts for two-thirds of the world's most polluted cities — 21 of the most polluted 30 cities; 14 of the highest 20; and 6 of the highest 10 — in the **2019 World Air Quality Report released by the pollution tracker IQ Air and Greenpeace**.
  - ♦ The ranking is based on a comparison of PM2.5 levels.
- Last year, a **public health emergency** was declared as post-Diwali New Delhi's air quality index approached 500, the “severe plus emergency” category.

- Recently a study was released by **Central Pollution Control Board** named **Impact of Lockdown on Ambient Air Quality**.
  - According to it Particulate Matter (PM) 2.5 levels in Delhi halved during the covid-19 lockdown from 2019 levels.
  - PM10 levels fell a massive 60 per cent while nitrogen dioxide (NO<sub>2</sub>) plummeted 64 per cent during the second phase of lockdown.

### Causes of Air Pollution

- Stubble Burning:** Farmers from Punjab, Haryana and Uttar Pradesh burn the residue after harvesting paddy to clear the fields and make way for the sowing of wheat.
  - It emits large amounts of toxic pollutants in the atmosphere which contain harmful gases like Methane (CH<sub>4</sub>), Carbon Monoxide (CO), Volatile organic compounds (VOC) and carcinogenic polycyclic aromatic hydrocarbons.
- Vehicular Emission:** It is a major contributor to Delhi's increasing air pollution. Surprisingly, the number of vehicles plying on the roads of Delhi is more than that of the three metropolitan cities of Mumbai, Kolkata and Chennai taken together.
- Topography:** Delhi lies in landlocked Indo-Gangetic region which does not have a geographical advantage that eastern, western or southern parts of the country enjoy. There is no sea breeze to disperse the concentrated pollutants.
  - Additionally, during winter, western disturbances carry dust storms from Gulf countries leading to enhanced smog conditions.
- Construction Sector:** Large scale construction in Delhi-NCR is another culprit that is increasing dust and pollution in the air.
- Fire Crackers:** It may not be the top reason for air pollution, but it definitely contributes to pollution.
  - Many areas in Delhi recording an Air Quality Index (AQI) of 999 (prescribed limit is 60), beyond which reading is not possible, on Diwali night.
- Dust Storm from Gulf countries:** During the smog in the year 2017, the dust storm from Gulf countries was also the reason which enhanced already worse condition.
- Growing population of the city:** The pressure and haphazard growth of the population is deteriorating the environment.
- Unplanned development:** There has been highly haphazard and unplanned development of industries and factors. Studies have revealed that only about 20% of the industrial units are set up in the approved industrial areas whereas the rest of them are in residential and commercial areas.
- Large waste generation:** NEERI has reported that everyday almost 8,000 m tones of solid waste is being generated in Delhi. Plus, we also have the industrial hazardous and non-hazardous waste, all of which is major sources of pollution.
- Dependence on fossil fuels:** There has been too much dependence on fossil fuels like coal-fired power plants etc.



### EFFECTS OF AIR POLLUTION:

- Public Health Emergency:** Air pollution in India is not simply an environmental problem, but a major public health concern.
  - The **Centre for Science and Environment** reported that air pollution kills an average of 8.5 out of every 10,000 children in India before they turn five.
  - Similarly, the **WHO** in 2016 reported that pollution has led to the deaths of over 1 lakh children in India.
  - Overall, several internationally acclaimed studies have affirmed that **life expectancy in India has declined anywhere between 2 to 3 years**.
- Global warming and greenhouse effect:** CO<sub>2</sub> is a good transmitter of sunlight and but restricts long term infrared radiation reflecting back from earth's surface preventing earth from being cooled.
- Apart from this, the gases discharged from refrigerators, air conditioners etc. are responsible for depletion of the Ozone layer.
- Photochemical Smog:** It is secondary pollutant resulting from hydrocarbons and nitrogen oxides that react in presence of sunlight to produce ozone, nitrogen dioxide and peroxy acetyl nitrate (PAN).

- Air pollution affects **migratory path of birds**.

## GOVERNMENT INITIATIVES TO TACKLE AIR POLLUTION:

### National Clean Air Programme (NCAP)

- It is a long-term, time-bound, national-level strategy to tackle the increasing air pollution problem across the country. The total tentative cost of NCAP is estimated at Rs 637 crore.
- **Objective:** Comprehensive management plan for prevention, control and abatement of air pollution, besides augmenting the air quality monitoring network across the country.
- **Focuses on:** Collaborative and participatory approach covering all sources of pollution and coordination between relevant central ministries, state governments, local bodies and other stakeholders.
- Intensive awareness, training and capacity-building drive, with specific impetus on augmentation of manpower and infrastructure facilities of the Central Pollution Control Board (CPCB) and the State Pollution Control Board (SPCBs).
- A credible, transparent and accountable **data collection and monitoring system** that is available for timely swift action is to be ensured.
- Increasing the number of monitoring stations, data dissemination, public participation on planning and implementation.
- Setting up of air information centre for data analysis, resource apportionment studies, national inventory and rural monitoring stations, besides guidelines for indoor air pollution.

#### DO YOU KNOW?

- Recently, NGT has directed the Ministry of Environment, Forest and Climate Change (MoEFCC) to modify the NCAP.
- According to it, deadline to reduce air pollution by 20-30% by 2024 needs to be reduced.
- Increase the target of reduction.
- Review the action in terms of shift to e-vehicles and CNG vehicles, intensifying public transport systems, mechanical cleaning of roads, improvement in fuel quality, etc.
- Ensure the assessment and installation of the requisite number of Ambient Air Quality Monitoring Systems within six months.

### The Central Pollution Control Board (CPCB):

- It is a statutory organisation under the Ministry of Environment, Forest and Climate Change.
- It was established in 1974 under the Water (Prevention and Control of pollution) Act, 1974.

- It is also entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.
- It provides technical services to the Ministry of Environment and Forests under the provisions of the Environment (Protection) Act, 1986.
- It Co-ordinates the activities of the State Pollution Control Boards by providing technical assistance and guidance and also resolves disputes among them.
- It is the apex organisation in country in the field of pollution control.

### LiDAR (Light Detection and Ranging):

- Being used to vertically monitor the air quality of Delhi-NCR
- To track the evolution of a pollutant over time
- To detect leakage of organic pollutants in storage facilities and industrial plants, such as oil refineries
- To observe the structure and height of mixing layers
- To measure the transport and diffusion of plumes or clouds of particulates
- To remotely determine smoke-plume opacity

### Climate & Clean Air Coalition

- Unites governments, civil society and private sector, committed to improving air quality and protecting the climate in next few decades by **reducing short-lived climate pollutants (SLCP)** across sectors.
- By the governments of Bangladesh, Canada, Ghana, Mexico, Sweden and the United States, along with the United Nations Environment Programme (UNEP).
- **Objective:** To address short-lived climate pollutants.
- **Initial focus on:** Methane, black carbon, and HFCs.



### National Air Quality Index (AQI):

- The AQI is an index for reporting daily air quality. It tells how clean or polluted the air is.
- The higher the AQI value, the greater the level of air pollution and the greater the health Concern.

- Research studies have attributed the key sources of PM2.5 in summer to be: dust and construction activities (35%), transport sector (20%) and industry (20%).
- **Six AQI categories**
  1. Good (0-50)
  2. Satisfactory (51-100)
  3. Moderately polluted (101-200)
  4. Poor (201-300)
  5. Very Poor (301-400)
  6. Severe (401-500)

### System of Air Quality and Weather Forecasting and Research (SAFAR):

- It was indigenously developed by Indian Institute of Tropical Meteorology, Pune.
- It is run by India Meteorological Department (IMD).
- The objective is to provide Real-time air quality index on 24x7 basis with colour coding along with 72-hour advance weather forecast.
- Another goal is to issue health advisory to prepare citizens well in advance.

### GreenCo Rating System:

- GreenCo Rating system has been acknowledged in India's Intended Nationally Determined Contribution (INDC) document.
- It is used as a proactive voluntary action of Indian industry / private sector towards combating climate change.
- It is developed by Confederation of Indian Industry (CII).
- CII is a non-government, not-for-profit, industry-led and industry-managed organization.

### OTHER RECENT INITIATIVES TO TACKLE AIR POLLUTION IN DELHI:

- There are **mobile enforcement teams** deployed at various locations for monitoring polluting vehicles and vehicles not having PUC certificates.
- A **Mass Rapid Transport System (MRTS)** is being constructed with the aim of providing a non-polluting, useful and affordable rail-based mass rapid transit system for Delhi, integrated with other modes of transport.
- With a view to reducing vehicular pollution, there has **been a ban imposed on the plying of more than 15 years old commercial/transport vehicles, taxis** and autos that run on conventional fuels, including diesel driven city buses.
- There has also been **tightening of mass emission standards** for new vehicles.

- The **quality of the fuel being supplied in Delhi** has been significantly improved over the years by the ban of selling leaded petrol, introduction of low sulphur diesel, reduction of sulphur and benzene content in petrol.
- There has been regular placement **of dustbins, purchase of additional front-end loaders, mechanical sweepers, dumper placers**, tipper trucks, to collect and dispose of garbage.
- The biggest positive step taken by the Delhi government was **to permanently shut down the old, polluting Badarpur coal-fired power plant** in the southeastern outskirts of Delhi. The plant, a major cause of the Capital Region's air pollution, had been shut down every winter for the past three years to scale back pollution.
- The Centre constituted the **Supreme Court-empowered Environment Pollution (Prevention and Control) Authority or the EPCA**, which is tasked with taking various measures to tackle air pollution in the National Capital Region.
- Delhi government regularly comes up with emergency measures **like Odd-Even formula** for vehicles to control rising pollution.
- Leapfrogging from **BS-IV to BS-VI** standards for vehicles by 1<sup>st</sup> April 2020.

### Problems in Legislation

- The Air Act 1981 governs the air pollution system in the country.
- **Toothless Watchdog:** Under the act, the Pollution Control Boards are presently unable to fulfil their mandate as watchdogs against polluters.
- **Pollution Liability:** India's pollution liability regime has not prioritised the adverse impact of pollution on health.

### Strengthening the Act:

- Giving **more powers to pollution control boards** to declare public health emergencies in case of toxic air quality, with the power to temporarily shut down all polluting activities.
- **Power to Levy Penalties:** Presently, boards cannot levy penalties, they should be empowered to encash environmental compensations from polluters to make up for the cost of mitigating the damage that they have caused.
- **Multiple Authorities:** The appropriate legislative measures for multi-sectoral participation and collaborating the efforts of state and federal pollution control boards should be taken urgently.

### Environment Protection (Prevention and Control) Authority

- **Objective:** Protecting and improving the quality of the environment and controlling environmental pollution' in the National Capital Region.
- EPCA is **Supreme Court mandated body** tasked with taking various measures to tackle air pollution in **the National Capital Region**. It was notified in 1998 by Environment Ministry under Environment Protection Act, 1986.
- **Composition:** Besides the chairman, the EPCA has 14 members, some of whom are the environment secretary of the National Capital Territory of Delhi (NCT), chairperson of the New Delhi Municipal Council, transport commissioner of the NCT, the commissioners of various municipal corporations of Delhi and professors at IIT Delhi and Jawaharlal Nehru University.
- **Functions:**
  - ♦ To protect and improve quality of environment as well as prevent environmental pollution in National Capital Region.
  - ♦ To enforce Graded Response Action Plan (GRAP) in NCR as per the pollution levels.

### What more needs to be done?

As air pollution is a silent killer, the government needs to move beyond tokenism to concrete grassroot steps to curtail the menace. Some of them could be:

- **Controlling Stubble Burning:** The most efficient technology to counter crop burning at the moment is **Turbo Happy Seeder (THS)** which is a machine mounted on a tractor that not only cuts and uproots the stubble, but can also drill wheat seeds in the soil that have just been cleared up. The straw is simultaneously thrown over sown seeds to form a mulch cover.
  - ♦ Establish **Farm Machinery Banks** for custom hiring of in-situ crop residue management machinery.
  - ♦ Financial Assistance to the farmers for Procurement of Agriculture Machinery and Equipment.
- **Public Transport:** The push for public transport has long been highlighted as a potential solution. However, we are far from implementing it on the ground.
  - ♦ The current public transport system is disintegrated. We need to integrate it physically ensuring that it is reliable, comfortable and provides last mile connectivity but without additional cost.
- **Municipal Planning:** Open burning of municipal solid waste and industrial waste is fouling up the air.
  - ♦ The need is to build institutional capacity for implementation and enforcement and have the necessary legal back-up for compliance and strong deterrence.

- **Sprinkling of Waste Water in Construction Sites:** Waste water can be used to sprinkle construction sites so that pollutants emanating from these sites can be controlled.
- **Large Scale Afforestation Drives:** The government should identify large tracks that can be planted with trees for green cover across the city. Also, hill ranges like the Aravallis should be preserved and they should be planted with trees.

### International Experiences:

- In the United States, the Clean Air Act has proven that public health and economic progress can go together.
  - ♦ For instance, the aggregate national emissions of the six common pollutants in the USA dropped an average of 73% from 1970 to 2017.
  - ♦ Through one piece of legislation, the US has challenged multiple sources of pollution, airborne or motor vehicle-led.
- Similarly, after declaring a war on pollution, Chinese cities reduced particulate concentration by 32% in 2018.

### Way Forward:

- There is a need to urgently confront air pollution and global warming and strengthen health systems. The short-term respite from air pollution that most big cities in the world experienced was because of lockdown measures that will save some lives, but only long-term reductions in air pollution can have lasting impacts.

### Graded Response Action Plan

- The action plan which was formulated in **2016** and notified in 2017 for Delhi and the National Capital Region (NCR).
- The plan was formulated after several meetings were held by Environment Pollution (Prevention and Control) Authority (EPCA) with state government representatives and experts.
- These are institutionalized measures to be taken when air quality deteriorates, hence works **only as an emergency measure**.
- It is **incremental in nature**, means only when air quality deteriorates there is step by step measures to follow
  - ♦ GRAP includes the measures which will be taken by different government agencies to prevent worsening of Air Quality of Delhi-NCR and prevent PM10 and PM2.5 levels to go beyond the 'moderate' national Air Quality Index (AQI) category.
- It is **not applicable for whole year** but only when air quality degrades.
- The plan requires action and coordination among 13 different agencies in Delhi, Uttar Pradesh, Haryana and Rajasthan (NCR areas).

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# WHAT ARE THE 3 FARM BILLS? RATIONALE AND CHALLENGES

Recently, the Ministry of Agriculture & Farmers Welfare has introduced three bills to reform the farm sector in India.

## About:

- Despite India becoming a surplus country in most agricultural commodities, farmers have been unable to get better prices due to a lack of investment in cold storage, warehouses, processing, and export as the entrepreneurial spirit gets dampened due to Essential Commodities Act. Farmers also suffer huge losses when there are bumper harvests, especially of perishable commodities.
- The recent bills are aimed at targeting such lacunae while **transforming agriculture** in the country and **raising farmers' income**.

## What are Farm Bills 2020?

The three bills are viz.

- The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Bill, 2020.
- The Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Bill, 2020.
- The Essential Commodities (Amendment) Bill, 2020.

## FARMER'S PRODUCE TRADE AND COMMERCE (PROMOTION AND FACILITATION) BILL, 2020:

### Important Features:

- **Trade of farmer's produce:** To create an ecosystem where farmers and traders enjoy the freedom to sell and purchase farm produce outside registered 'mandis' via states' APMCs. They can now sell to any local markets or in other state or online.
- Thus, removes barriers to inter-state and intra-state trade of farmers' produce.
- **Market fee abolished:** Prohibits State govts from collecting market fee, cess or levy for trade outside the APMC markets.
- **Online trading:** It provides a framework for electronic trading of agricultural produce.
- To reduce marketing/transportation costs and help farmers in getting better prices

### Benefits:

- **Choice to farmer:** According to the government, the law will give Freedom of Choice to farmers as they will have a variety of marketplaces.

- It will help in promoting trade outside the state and enhance food security.
- **Farmer can claim better price:** With removal of mandi fees and choice to sell in variety of markets help to seek remunerative price for the produce.
- One country, one market.

### Issues:

- **Federal angle:** Critics point out that agricultural marketing comes under State list of Indian Constitution how can Centre make law for it.
- **Non favourable market conditions:** With rising input costs, farmers do not see the free market based framework providing them remunerative prices. In fact, under MSP regime too amount is meagre.
  - ♦ Prior experience of Bihar which abolished APMCs in 2006 shows that abolition of mandis have reduced average received prices for farmers compared to the MSP for most crops.
- **Issue of MSP:** Setting the MSP in the law is problematic because the **MSP will have to change frequently**.
- Changing the law, again and again, will be a tedious process.

## THE FARMER (EMPOWERMENT AND PROTECTION) AGREEMENT OF PRICE ASSURANCE AND FARM SERVICES BILL, 2020:

### Important Features:

- **Farming Agreement:** Farmers can enter into a contract with corporate, agribusiness firms, processors, wholesalers, exporters, or large retailers for the sale of future farming produce at a **pre-agreed price**.
- Marginal and small farmers, with land less than five hectares, to gain via aggregation and contract.
- It will transfer the risk of market unpredictability from farmers to sponsors.
- To enable farmers to access modern tech and get better inputs.
- Effective dispute resolution mechanism with redressal timelines.

**Benefits:**

- **Level playing field:** Will empower farmers to engage with big players, on a level playing field without any fear of exploitation.
- **Transfer the risk:** It will transfer the risk of market unpredictability from the farmer to the sponsor.
- **Access to technology:** Enable the farmer to access modern technology and better inputs.
- **Attract private sector:** It will attract private sector for building supply chains for supply of Indian farm produce to national and global markets, and in agricultural infrastructure.
- **Eliminate intermediaries:** Farmers will engage in direct marketing thereby eliminating intermediaries resulting in full realization of price.

**Major Issues:**

- **Lack of protection to farmers:** Critics also point out that **what happens if the buyer says the contract cannot be fulfilled** because the quality of the crop is not what was agreed.
- **No price fixation:** There is no mention of a mechanism for fixing a price.
- **Exploitation by private houses:** There is also an apprehension that the free-hand given to private corporate houses could lead to farmer exploitation.
- **More court cases and its effect on small farmers:** Experts, however, say that 82% of farmers in India are small and marginal farmers that are likely to go to court against massive supermarket chains.

## THE ESSENTIAL COMMODITIES (AMENDMENT) BILL, 2020 PROVISIONS:

The ECA has its **roots in WW2 where laws were implemented by the British** to exploit the supply within the country. The bill places restrictions on the storage of essential commodities like pulses, oilseeds, onions, etc but has now been amended.

**Important Features:**

- The new Essential Commodities Amendment **removes** foodstuff such as cereals, pulses, potato, onions, edible oilseeds, and oils, from the list of essential commodities
- The Central govt can regulate supply in exceptional conditions that includes dire circumstances, like a **war or famine**, or an **"extraordinary" price rise**.
- Stock limit based on price rise: New Amendment limits **government to impose a stock limit** with an exception if–
  - ♦ There is a **100% increase** in the price of perishable goods, or
  - ♦ **50% increase** in the price of non-perishable goods.

**Benefits:**

- **Attract private players:** It will remove fears of private investors of excessive regulatory interference in business operations.

- It will bring **investment for farm infrastructure** like cold storages, and modernizing the food supply chain.
- It will help both farmers and consumers by bringing in **price stability**.
- It will create a **competitive market environment** and cut wastage of farm produce.

### What are the Essential Commodities?

As per the **Essential Commodities Act (1955)**, an "essential commodity" means a commodity specified in the "Schedule" of this Act.

- The Act gives **powers to the central government to add or remove** a commodity in the "Schedule" **in public interest** in consultation with state governments.
- By declaring a commodity as essential, the government can **control the production, supply, and distribution** of that commodity, and **impose a stock limit**.

**At present, the "Schedule" contains 9 commodities:**

Drugs; fertilizers, whether inorganic, organic or mixed; foodstuffs, including edible oils; hank yarn made wholly from cotton; petroleum and petroleum products; raw jute and jute textiles; seeds of food-crops and seeds of fruits and vegetables, seeds of cattle fodder, jute seed, cottonseed; face masks; and hand sanitizers.

**New Items included:**

The latest items added to this schedule are **face masks** and **hand sanitizers**, which have been declared essential commodities in the wake of the Covid-19 outbreak.

**Major Issues:**

- The new changes will lead to **increased hoarding** and an **artificial price rise** of things.
- This could **undermine food security** since the States would have no information about the availability of stocks within the State.
- Critics anticipate irrational volatility in the prices of essentials **and increased black marketing**.

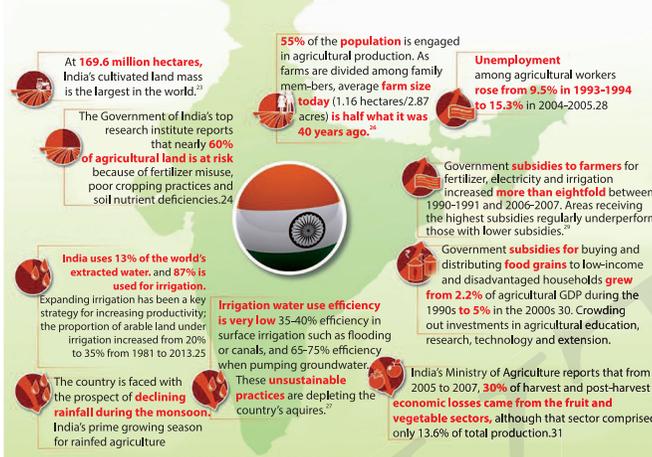
**Besides, there are also other burning issues like:**

- **States will lose revenue** as they won't be able to collect 'mandi fees' if farmers sell their produce outside registered APMC markets.
- What happens to **arthiyas** or **'commission agents'** in states if the entire farm trade moves out of mandis?
- It may eventually end the MSP-based procurement system.
- Electronic trading like in e-NAM uses a physical 'mandi' structure.

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**Way Forward:**

- A lot of the success of these bills depends on trust and consensus. In the end, what will determine the results of this latest set of reforms will be their implementation.
- The genuine uncertainty over what private procurement will mean shall be addressed at the forefront by the govt with proper scrutiny.
- Political parties that are opposing these Bills should coordinate better keeping farmers' interests in mind than political interests.

**INDIA'S AGRICULTURE SECTOR: PRODUCTIVITY CHALLENGES****MSP Mechanism**

- The MSP is the rate at which the government buys grains from farmers.
- **Need of MSP:** It is to counter price volatility of agricultural commodities due to the factors like variation in their supply, lack of market integration and information asymmetry.
- The MSP is fixed on the recommendations of the Commission for Agricultural Costs and Prices (CACP) based on demand and supply, cost of production (A2+ FL Formula), price trends in market, inter crop parity, etc.
- Final decision on MSP is taken by Cabinet Committee on Economic Affairs of Union Govt.
- **Cost A2** - These are the costs the farmer actually pays out of his/her pocket for buying various inputs ranging from seeds to fertilisers to pesticides to hired labour to hired machinery or even leased-in land.
- **Cost A2 +FL** - In agriculture, farmers also use a lot of family labour and if their cost is imputed and added to cost A2, that concept is called cost **A2+FL**.

- MSP is announced for five groups (22 commodities) of commodities: cereals, pulses, oilseeds, cotton, jute and mesta.
- **Problems in MSP System:**
  - ♦ Dominance of rice and wheat in procurement.
  - ♦ As per Niti Aayog Report on MSP:
    - ♦ In **Assam** there was no Paddy Procurement Centre (PPC) in one out of the two selected districts.
    - ♦ In **Bihar**, the reason for not selling at MSP was that the purchase centers were located at distance making high transportation costs. The involvement of middlemen was very high at the Block Purchase Centers.
    - ♦ In **West Bengal**, none of the farmers sold their produce at MSP. Intermediaries are quite common due to the non-existence of mandis/market places for paddy.
  - ♦ Delayed payments to farmers make them force sell their produce in market at lower prices.
  - ♦ Economic cost borne by Food Corporation of India is much higher.
  - ♦ Grains stocks have exceeded their limits however they cannot be exported without subsidies, which invites WTO's Objections.
  - ♦ Wide disparities within states' infrastructure for e.g. Punjab have strong network of MSP and APMC mandis while that's not so with eastern states.

**Why these market oriented reforms?**

- MSP regime was the creation of the era of scarcity in the mid-1960s. Indian agriculture has, since then, turned the corner from scarcity to surplus.
- In a surplus economy, unless we make agriculture demand-driven, the MSP route can spell financial disaster.
- This transition is about changing the pricing mix — how much of it should be state-supported and how much market-driven.
- The new laws are trying to increase the relative role of markets without dismantling the MSP system.

**M.S. Swaminathan Committee on MSP Reforms:**

- Awareness and information dissemination to the lowest levels of farmers.
- On spot payments with the help of technology to the farmers.
- Timely announcement of MSP prices i.e., well before sowing decisions are taken by farmers.
- Improved facilities at procurement centres.
- Consultation with State govt before announcing MSPs.

# Agriculture Marketing

## Agriculture Produce Market Committee:

- An Agricultural Produce Market Committee (APMC) is a marketing board established by a state government in India to ensure farmers are safeguarded from exploitation by large retailers, as well as ensuring the farm to retail price spread does not reach excessively high levels.
- Agriculture is a state subject and almost all state governments enacted APMC act in 1950's or so, to bring transparency and end discretion of traders. However, widespread perception for this act is that it has worked contrary to almost every stated objective, at least in recent past.
- **Features:** Under the APMC acts, States are geographically divided in to markets which are headed by market committees and any production in that area shall be brought to a market committee for sale.
  - ♦ This is applicable to 'notified agricultural products' which differs from state to state and generally includes most of the important cereals, vegetables and other horticulture products.
  - ♦ In this Market committee (popularly called Mandi) there are commissions agents (called arhatiyas) who hold license and are allotted a shop in the market. Farmer and buyer have discretion to go to any agent in this market, based on personal relations. Normally farmers chose agents from their own village and are influenced by age old relations of money lending.
- **Shortcomings of the Act:**
  - ♦ **Monopoly of APMC**
  - ♦ **Cartelization:** It is quite often seen that agents in an APMC get together to form a cartel and deliberately restraint from higher bidding. Produce is procured at manipulatively discovered price and sold at higher price.
  - ♦ **Entry Barriers:** License fee in these markets are highly prohibitive. In many markets farmers were not allowed to operate. Further, over and above license fee, rent/value for shops is quite high which keeps away competition.
  - ♦ **High commission, taxes and levies:** Farmers have to pay commission, marketing fee, APMC cess which pushes up costs. Apart from this many states impose Value Added Tax.
  - ♦ **Conflict of Interest:** APMC play dual role of regulator and Market. Consequently, its role as regulator is undermined by vested interest in lucrative trade. They despite of

inefficiency won't let go any control. Generally, member and chairman are nominated/elected out of the agents operating in that market.

- **APMC Model Act 2003:** Taking these concerns into cognizance, Central Government appointed a working group which recommended a Model APMC act. Salient features are –
  - ♦ Facilitates contract farming model.
  - ♦ Special market for perishables.
  - ♦ Farmers, private persons can set up own market.
  - ♦ Licensing norms relaxed.
  - ♦ Single market fee.
  - ♦ APMC revenue to be used for improving market infrastructure.
- The model legislation has actually given rise to a conflict of interest, as the APMC, which is a major player, is also the regulator/registering authority. The state governments didn't reform the APMC legislation, as it generates huge revenues.
- Thus, to break the monopoly of APMCs the marketing reforms are necessary. These farm acts are step in right direction.

## Constitutional Debate around the Bills:

- Since **agriculture and markets** are State subject **entry 14 and 28 respectively in List II**, these acts are being seen as a direct encroachment upon the functions of the States.
- However, Farm Acts were passed by the Central government **under Entry 33 of the Concurrent List**. Entry 33 of the Concurrent List **mentions trade and commerce in foodstuffs that includes wheat, rice, coarse grains, edible oils, etc.**
- Thus, States have no authority to overrule the legislations passed by the Centre **except under Article 254(2)**.
- Article 254(2) enables a State government to pass a law, on any subject in the Concurrent List, that may contradict a Central law, provided it **gets the President's assent**.
- However, the Parliament can enact at any time any such law to nullify changes made by the Legislature of the State.
- Article 257(1) also states that the executive power of every State shall not impede the exercise of the executive power of the Centre. In that Centre can impose President's Rule.
- Thus any state need assent of both Governor of State and the President of India.

# WOMEN IN RESEARCH IN INDIA: WHAT'S STOPPING THEM?

'Private firms employ more women in R&D', according to data in the Science and Technology Indicators (STI), 2018.

## About:

- India's private sector research companies appear to employ a larger proportion of women in core research and development activities than government-funded major scientific agencies do.
- Of the 20,351 women employed in private R&D companies, 15,011 — or about three in four — were involved in "R&D activities" and the rest in "auxiliary or administrative activities".
- However, of the 23,008 women in "major scientific agencies", fewer than half — or 10,138 — were in the 'R&D activities' category.
- India had 3,41,818 scientists in R&D with nearly 2,03,759 employed by government institutions or in the higher education sector, as of 2018.

## Historical Trend:

- For every one of the 15,011 women counted earlier, there are six male scientists in private sector R&D establishments or about 92,000.
- However, the proportion has improved to about one in four in major scientific agencies where there are 43,753 male scientists in 'R&D' for the 10,138 women equivalent.
- The bulk of scientists in private and publicly funded organizations included were in 'Engineering Technology' with a strength of 1,21,53 followed by the Medical Sciences and Natural Sciences with respective strengths of 32,143 and 32,092.

### Science and Technology Indicators (STI)

- The STI is a periodic compendium of the state of scientific research in India.
- It is prepared by the National Science and Technology Management Information System, a division of the Department of Science Technology.

## Causes for Low Participation of Women:

Several inquiries have been launched by independent commissions as well as the **NITI Aayog** to ascertain causes for the inadequate representation of women scientists. The major findings of those inquiries are:

- **Mindset:** A major factor responsible for this is the mindset that boys are better at science and girls are not. Women are still

considered less efficient than men when it comes to STEM-related fields is a major misconception.

- **Fewer role models:** Role models many times are a factor in making career choices. However, there are fewer female role models in the fields of science, math, or engineering for young female students to follow. Moreover, our textbooks too rarely talk about these role models.
- **Less women-specific science institutes:** Only 11% of colleges in India are exclusively for women, the majority of which offer arts and commerce rather than science.
- **Patriarchy:** When comes to the question of pursuing a career in science, the entrenched patriarchy in society holds women back. There are patriarchal attitudes in hiring practices or awarding fellowships and grants etc. A male-dominated work environment and gender insensitivity are additional burdens for women scientists.
- **Economic factors:** This is another major constraint for women in pursuing science. Even for families with greater resources, economic considerations affect the pursuit of a science degree as a science that is generally more expensive than an art or a commerce degree.
- **Considered as Burden:** Families expect daughters to marry and assume obligations to their husband's family. Many families think that a daughter's education would primarily benefit her in-laws rather than her natal family. Such families traditionally view boys' education differently from girls'

## Global Scenario:

- **Women in STEM:**
  - ♦ UNESCO data from 2014-16 shows that only around 30% of female students select STEM (Science, Technology, Engineering, and Mathematics)-related fields in higher education.
  - ♦ Female enrolment is particularly low in information technology (3%), natural science, mathematics, and statistics (5%), and engineering and allied streams (8%).
- **Research as a Profession:**
  - ♦ According to a 2018 fact sheet prepared by UNESCO on women in science, only 28.8% of researchers are women.
- **Share in Nobel Prizes:**
  - ♦ Between 1901 and 2019, 334 Nobel Prizes have been awarded to 616 Laureates in Physics, Chemistry, and Medicine, of which just 20 have been won by women.

## National Scenario:

### • Women in STEM:

- ♦ The female enrolment in science streams rose from 2010-11 to 2015-16.
- ♦ According to the NITI Aayog report in 2015-16, 9.3% of female students in Undergraduate (UG) courses were enrolled in engineering, compared to 15.6% across genders. Conversely, 4.3% of female students were enrolled in medical science, compared to 3.3% across genders.

### • Research as a Profession:

- ♦ Only 13.9% of women work as a researcher in India. At master's and doctoral levels, female enrolment remained lower than overall enrolment.

### • Presence at Technical Professions:

- ♦ The NITI Aayog report has also found that in over 620 institutes and universities, including IITs, NITs, ISRO, and DRDO, the presence of women was 20.0% among Scientific and Administrative Staff, 28.7% among Post-Doctoral Fellows, and 33.5% among Ph.D. scholars.

### • Gender Gap Index

- ♦ According to the Global Gender Gap Index 2020, a study covering 153 economies, India has slipped to the 112th spot from its 108th position in 2018.
- ♦ The report also says it would take nearly a hundred years to close the gender gap in various fields in India compared to the time it would take in other countries.

### • Work Participation:

- ♦ According to the World Bank, India ranks 163rd out of 181 countries in female labor force participation.
- ♦ Also, India is one of the few countries in the world where women's work participation rates have fallen sharply — from 29% in 2004-5 to 22% in 2011-12 and 17% in 2017-18.

### • Inequality at Work:

- ♦ According to the Centre for Monitoring Indian Economy (CMIE), a large percentage of all the jobs lost last year were held by women. Out of the 11 million jobs lost in 2018, women accounted for 8.8 million.
- ♦ Indian women receive 34% fewer wages than men for equivalent work, spend around five hours a day on unpaid care work compared to a mere half an hour for men, and are primarily engaged in low-paying, informal sector work.

## Government Initiative to Bolster Women's Participation:

- **Beti Bachao Beti Padhao (BBBP) Scheme:** It is the joint initiative of the Ministry of Women and Child Development, Ministry of Health and Family Welfare, and Ministry of Human Resource Development to ensure survival, protection, and empowerment of the girl child.
- **KIRAN Scheme:** It stands for Knowledge Involvement in

Research Advancement through Nurturing (KIRAN) Scheme. It has been started by the Department of Science and Technology (DST) aimed to bring gender parity in the Science & Technology sector by inducting more women talent in the research & development domain.

- **Consolidation of University Research for Innovation and Excellence in women's universities (CURIE)** is another component of KIRAN that has a focus to develop state-of-the-art infrastructure to help a large number of women enhance their S&T skills and knowledge.

- **GATI Scheme:** It stands for The Gender Advancement for Transforming Institutions. It aims to develop a comprehensive charter and a framework for assessing Gender Equality in STEM.

- **Vigyan Jyoti Scheme:** It has been launched by the Department of Science & Technology (DST). It aims to create a level-playing field for the meritorious girls in high school to pursue Science, Technology, Engineering, and Mathematics (STEM) in their higher education.

- **The Science and Technology Policy of the Govt. of India, 2003** enunciates a commitment to promote the empowerment of women in S&T and ensure their full and equal participation. This was further reiterated in the 2013 policy.

## Way Forward:

These issues can be addressed by the following measures:

- **Holistic approach:** Getting more girls and women into STEM education and careers requires holistic and integrated responses that reach across various sectors.
- **Private participation:** Companies can invest in building female talent in a multitude of ways, some of which include providing more internship opportunities for women, giving STEM scholarships to meritorious girls and focusing on retaining women employees in the workforce.
- **Spread awareness:** Awareness needs to be spread among parents that pursuing science for girls is not as difficult as it is presumed. With family support and encouragement, girls can be high achievers in science.
- **Mentoring:** Mentorship programs for girls at secondary and senior secondary levels are the need of the hour.
- **Make education gender-sensitive:** There is a need to promote positive stereotypes of the roles of women in textbooks. It is important that when girls come out of school, they have the dream to carve a path for themselves. Education for boys at the school level should be in the direction of making them gender-sensitive.
- **Return-to-work programs** for women Institutes should provide crèches for the children.
- Also, the **better political representation of women** can go a long way in deconstructing the stereotype of women.



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# INTEGRATED THEATRE COMMAND: AN INEVITABLE NECESSITY

Integrated Theatre Commands are the next big step in defence sector reforms after the formation of Chief of Defence Staff.

## What is the Integrated Theatre Command?

- Simply put, it is a unified command in which the resources of all the services are unified under a single commander looking at a geographical theatre.
- It means that a single military commander, as per the requirements, will have the resources of the Army, the Navy and the Air Force to manage a security threat. He will not be answerable to individual service.
- The commander of a joint command will have the freedom to train and equip his command as per the objective and will have logistics of all the services at his beckoning.
- The three services will retain their independent identities as well.
- A committee headed by **Lieutenant General D B Shekatkar** had earlier recommended three new commands: Northern, for China; Western, for the Pakistan border' and Southern, for maritime security.

## Integrated vs Jointness:

- **Jointness** means that while the 3 Services progress and develop in their respective spheres with their independent identity, they function together and so coordinate their operations in war.
- **Integrated commands**, on the other hand, seek to merge individual service identities to achieve a composite and cohesive whole.
- It implies enmeshing the three Services together at different levels and placing them under one commander for the execution of operational plans.

## Advantages:

- **Better acclimatisation of troops** in the given battlespace for operational efficiency.
- **Training needs and administrative requirements** of the troops can be better understood for specialization and conducting drills.
- **Quick mobilization of troops is possible** for the high-intensity war-like situation.
- The allocation of military hardware can become **theatre specific** and result in optimisation of the resources.
- Unified command will allow for **prompt and precise decision making** and remove hierarchical redundancies.

## Disadvantages:

- Faraway lands war and medium to **high-intensity wars are a distant possibility.**
- **With increased communication network**, the interaction between three organization is easy and can plan without much consideration of spatial distance, so there is no need for the new organisation.
- **Domain knowledge of the integrated force commander** is likely to be limited in respect of the other two Services components under his command, thereby limiting his ability to employ them most suitably and at the appropriate time.
- Besides, **interoperability of troops and equipment from dormant sectors to the active areas** during the war will be difficult and less effective because they would have been trained and equipped specifically to their primary sector of responsibility.
- Another serious challenge that could be faced is that the **concept of a theatre command may promote a sense of "fighting battles, rather than fighting a war"**, which in turn may reduce our ability to either win a battle of the war.

## Current Command Structure in India:

- The current structure of the armed forces includes **17 different commands** from Army, Navy and Airforce.
- Each command is headed by a 4-star rank military officer.
- **India only has two tri-service commands.** The **first one is known as the Andaman and Nicobar Command (ANC)** created in 2001. It is led by service chiefs on a rotational basis.
- The second is a **functional command** (not overseeing a particular geographical location) called the **Strategic Forces Command.** The SFC (Strategic Forces Command), looks after the delivery and operational control of the country's nuclear assets. It was created in 2003.

## Recent Reforms in the Defense:

### Chief of Defense Staff

- The CDS is **the highest military office** that oversees and coordinates the working of the three Services.
- **The CDS will also head the Department of Military Affairs (DMA)** to be created within the Ministry of Defence (MoD) and function as its Secretary.

- CDS will give **single-point military advice to the government**, bringing about jointness in “operations, logistics, transport, training, support services, communications, repairs and maintenance of the three Services and will **act as the Principal Military Adviser to Defence Minister on all tri-Services matters**.
- The CDS would **not exercise any military command** over the three Service Chiefs but will provide impartial advice to the political leadership.
- The CDS will also be a member of the **Defence Acquisition Council** chaired by the Defence Minister and Defence Planning Committee chaired by the NSA and will also function as the **‘Military Adviser to the Nuclear Command Authority’**.

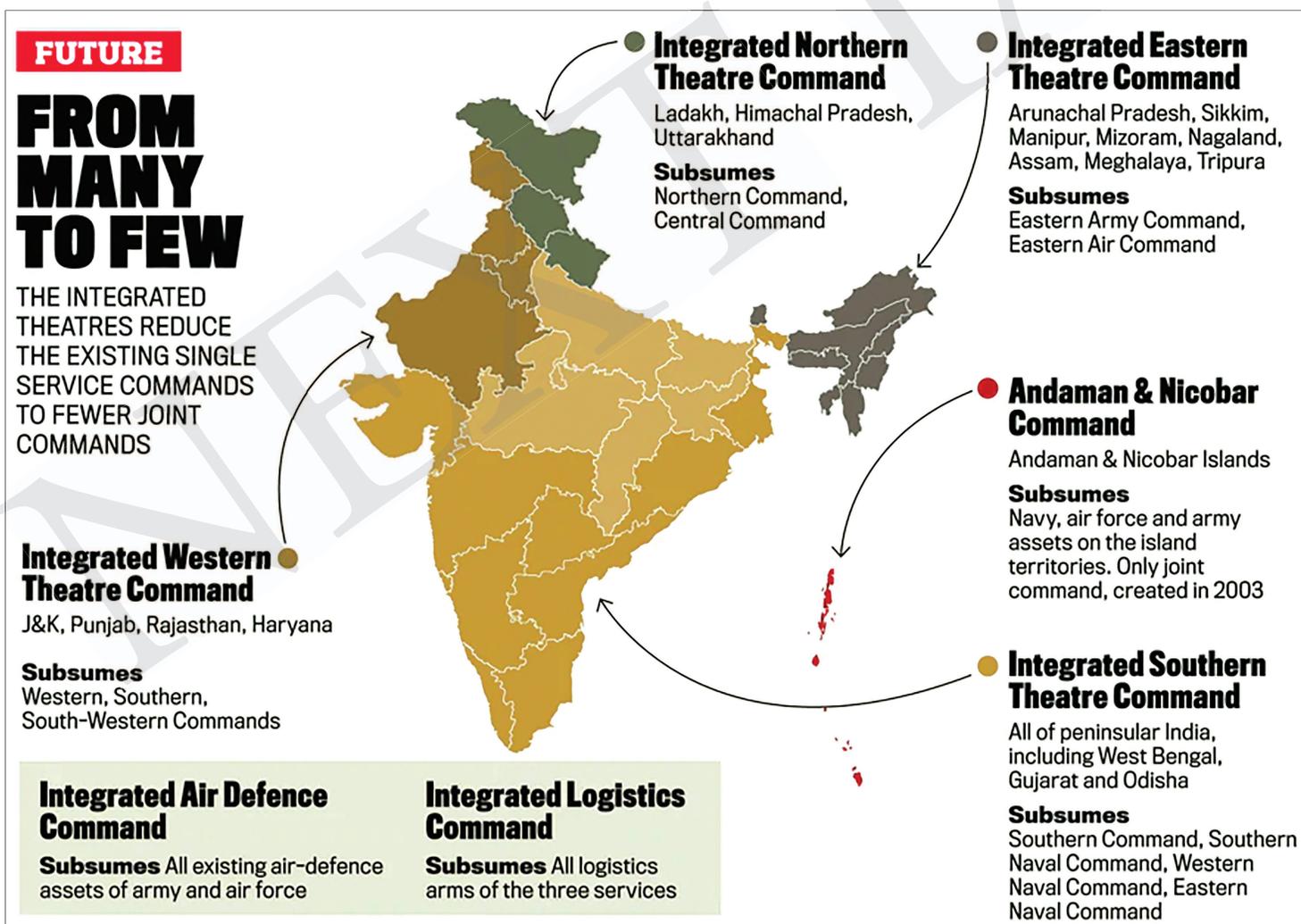
**Department of Military Affairs:**

- It is headed by the Chief of Defence Staff (CDS) and work exclusively on military matters will fall within the purview of

the DMA. Earlier, these functions were the mandate of the Department of Defence (DoD).

**Experience in Other Countries:**

- Several major militaries in the world have deployed integrated theatre commands. China’s People’s Liberation Army has five theatre commands. Its Western Theatre Command is responsible for India. The US Armed Forces have 11 unified commands, of which seven are geographic and four functional commands.
- The Changing Dynamics of national security which, now encompasses cyber, automation and such new challenges, cannot be solved by a disjointed general and MoD labyrinth but rather a clear and robust structure that should quickly respond to an emergent situation.



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# GREATER MALE CONNECTIVITY PROJECT (GMCP)

Exim Bank of India and the Maldives's Ministry of Finance signed an agreement for \$400 million in Male for connectivity projects.

## About:

- This agreement comes following India's announcement of a \$500 million package to the Maldives.

## Highlights of the Agreement:

- GMCP will be funded through line of credit (LoC) and along with that India has pledged a **grant of \$ 100 million** for the initiative.
  - ♦ The **Line of Credit is not a grant but a 'soft loan'** provided on concessional interest rates to developing countries, which has to be repaid by the borrowing government.
- This recent grant and LoC come in addition to the previous LoC of \$800 million, among India's largest loans extended in the region.

## About the Project:

- It will be a 6.7-kilometer bridge project **connecting Male with Gulhifalhu Port and Thilafushi industrial zone**, which will help in revitalizing and transforming the Maldivian economy.
- Once completed, this landmark project will streamline connectivity between the four islands, thereby boosting economic activity, generating employment, and promoting holistic urban development in the Male region.

## India-Maldives Relations:

### Background

- India and Maldives share ethnic, linguistic, cultural, religious, and commercial links.
- India was among the first to recognize the Maldives after its independence in 1965.
- India and Maldives officially and amicably decided their maritime boundary in 1976.
- **Diaspora** – 25,000 Indian nationals are living in the Maldives (second largest expatriate community).

### India's Crucial help to the Maldives

- **Operation Cactus:** It was an attempt by a group of Maldivians assisted by armed mercenaries of a Tamil secessionist organization from Sri Lanka, the People's Liberation Organisation of Tamil Eelam (PLOTE), to overthrow the government in the island republic of Maldives in 1988. The coup d'état failed due to the intervention of the Indian Army, whose military operations efforts were code-named **Operation Cactus**.

## Political Relations:

- The Maldives is an important aspect of **India's 'Neighbourhood First' policy and 'India First'** has been a stated policy of the Government of Maldives. Both nations are working together to counter China's presence in the Indian Ocean Region (IOR).

## Strategic Importance:

- The Maldives archipelago **lies next to key shipping lanes that ensure uninterrupted energy supplies to countries like China, Japan, and India.**
- Since 1988, defense and security have been a major area of cooperation between India and the Maldives.
- **Ekuverin'** is a joint **military exercise between India and Maldives.**
- The Maldives also has reiterated support for India's candidature for a non-permanent seat for the year 2020-21.

## Trade and Economy

- India is Maldives' **4<sup>th</sup> largest trade partner** after UAE, China, and Singapore. In 2018, India was the 5th largest source of tourist arrivals in the Maldives.

## Development Assistance Programme

- India has helped the Maldives in many diverse areas to bolster the development of the Maldives e.g. Indira Gandhi Memorial Hospital, Maldives Institute of Technical Education (now called the Maldives Polytechnic), etc.

## Concerns

- As China's naval expansion into the Indian Ocean has been growing, the significance of Maldives has steadily grown and now it's at the heart of international geopolitics.
- India-Maldives ties had deteriorated significantly under its President Yameen who was perceived to be close to China.

## Way Forward:

- Apart from **the India-First policy of Maldives**, China will continue to play an important role as an economic partner.
- India's patient handling of the Maldives crisis over the last few years has positioned it well.
- By coordinating its response with other like-minded regional and extra-regional players, India should underscore the options available to the Maldives if it decides to move away from China.
- The more India invests in strengthening democratic institutions in its neighborhood, the better returns it will get in its foreign policy.



# LARGER ROLE FOR INDIA AT UN

Recently, 75<sup>th</sup> anniversary of United Nations was marked on 24<sup>th</sup> October.

## About:

- 24<sup>th</sup> October has been celebrated as United Nations Day since 1948.

## India and UN: A walk through History:

- It has been around Seven and a half decades of India and its journey with the UN.
- In the course of the journey **until the end of the Cold War in 1989**, India had learned the ropes of exploring and enhancing its diplomatic influence as a moderating force in easing armed conflicts in Asia and Africa by disentangling them from the superpower rivalry and in parallel, the Indian leadership learned the hard way that the UN could not be relied upon to impartially resolve vital security disputes such as J&K.
- **The 1990s** spelled the most difficult decade for India in the world body, as the years were marked by the sudden end of the Cold War, the disintegration of the Soviet Union, and the resultant emergence of the United States as the unrivaled power in world politics.
- The uncertain political climate caused by unstable **coalition governments** along with the **balance of payments crisis** constrained India's capability to be active in various bodies, especially in the Security Council (UNSC) and the General Assembly.
- **The onset of the 21st century** opened new avenues for India to shine at the UN. The impressive economic performance in the first decade, thanks to economic liberalization and globalization policies.
- **India has emerged as a responsible stakeholder** in non-traditional security issue areas such as the spread of small and light weapons, the threat of non-state actors acquiring weapons of mass destruction, and the impact of climate change and India has scaled up its contributions to the development and humanitarian agencies, while India's share to the UN assessed budget has registered a hike from 0.34% to 0.83%.

## UNSC Reforms:

- There has been a constant demand for reforms in UNSC as it has been working on the same mechanism for more than 75 years.
- Many developing, as well as developed nations, feel that it does not represent the geopolitical and economic realities of the 21<sup>st</sup> century so reforms are necessary.

## Reasons for reform in UNSC:

- **Evolving geopolitical situation:** The geopolitics have changed drastically, the UNSC has changed relatively little since 1945 when wartime victors crafted a Charter in their interest and awarded "permanent" veto-wielding Council seats for the Allied victors.
- The **UNSC was expanded only once in 1963** to add 4 non-permanent members to the Council. Although the overall membership of the UN has increased from 113 to 193, there has been no change in the composition of the UNSC.
- The **veto power** is used by permanent five countries to serve the strategic interest of themselves and their allies. Since 1990, the United States has cast a veto on Council resolutions **16 times**, concerning Israeli-Palestinian relations. Russia has done so 17 times, including eight times over Syria.
- Issues such as deepening economic interdependence, worsening environmental degradation, transnational threats also call for effective multilateral negotiations among the countries based on consensus. Yet, all critical decisions of the UNSC are still being taken by the permanent members of the Security Council.
- There are **no regulatory mechanisms for global commons** like the Internet, Space, High Seas (beyond your EEZ-exclusive economic zone) and **no unanimity on how to deal with global issues** like terrorism, climate change, cybersecurity, and public health (as seen in the current pandemic).

## India and UNSC:

- An important question is the equitable expansion of the UNSC to enable India to attain permanent membership along with other claimants from Asia, Africa, and Latin America. The move has been stuck for more than 25 years because of a lack of unity among the regional formations.
- India's future role will probably depend on its ability to wither the impact of the multiple crises it now faces on account of an unabated economic slowdown and a troubled relationship with China. India will soon begin its two-year term as a non-permanent UNSC member (January 1, 2021).

## India's Bid for a Permanent Seat at UNSC:

- India deserves to be in the list of permanent members not only because of **the one-sixth world's population** that resides in India but because of the following reasons:

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- Being a founding member of the UN, India has always respected, participated, and supported the United Nations.
- India is not only **funding the UN substantially**, but it is also **leading the peace-keeping operations** of the UN; upholding the principles & credentials of the UN.
- India is a **major emerging economic power** & follows an **independent foreign policy**, which signifies India's stand on any issue on multinational forums.
- India is the **undisputed leader of the Third world countries**, as reflected by its leadership role in the Non-Aligned Movement and G-77 grouping, and India's inclusion in UNSC will strengthen India's stature as a 'moralistic force' for the developing states and help in making UNSC more democratic.
- India has always acted **responsibly in its nuclear weapon policy** in the region despite having fought various wars and heightened tensions with Pakistan and China.
- India is in competition with other countries of the **G4 grouping** (Japan, Brazil, and Germany) for a spot for permanent membership in UNSC.
- India's capacity to engage its military power beyond the Indian Ocean region is still to be tested.

### Roadmap after being selected as a Permanent Member:

- India may face challenges and opportunities in the UNSC due to the currently volatile situation as characterized by the Trump administration's disdain towards multilateral institutions, the changing U.S.-China equation, China's growing political isolation on account of the spread of the novel coronavirus, and China's aggressive territorial forays in eastern Ladakh and the South China Sea.
- In an unlikely scenario of China succeeding in convening a formal meeting on Kashmir to please Pakistan, India may have to choose either to abstain in the vote since it is a party to the dispute or vote against any unfavorable proposal that might be tabled.
- Also, the growing proximity of India with the U.S. may prompt India not to stay neutral to counterbalance China. It has to be seen in the light of growing China-Russia-Pakistan proximity.

### Barriers India Faces:

- It is argued by critics that India has still not signed the **NPT** and also refused to sign the CTBT in 1996.
- **China**, which has veto power in the UNSC being one of its five permanent members, has been stonewalling India's efforts to become a permanent member.

## UN SECURITY COUNCIL STRUCTURE LOCKS INTERNATIONAL SYSTEM

UN Security Council's five permanent members' use of their veto power for their national interests leads to questioning of the legitimacy of the UNSC

### UNSC STRUCTURE

- Use of force **at UN** is decided **by UNSC**
- **Five permanent** members have the right to veto a draft resolution
- To adopt a draft resolution, none of the permanent members should veto it and **9 countries** should vote in favor



China and Russia have vetoed four draft resolutions **on Syria** since 2011

The U.S. has used its veto right 42 times **for Israel** since 1972

**Palestine** has not become a UN member, as full membership requires **UNSC approval**

China **blocks Taiwan's UN membership**, not recognizing Taiwan as a sovereign country

### CRITICISM OF UN STRUCTURE

- Permanent membership system
- Five permanent members' veto right and weak equal representation due to a small number of members

### PERMANENT MEMBERS



CHINA FRANCE THE U.K. RUSSIA U.S.

### REFORM PROPOSALS

- Increasing the number of non-permanent members
- Restricting veto right

# INDIA-MYANMAR RELATIONS

India will hand over INS Sindhuvir, a Kilo-class submarine to the Myanmar Navy.

## About:

- This will be the **first submarine** of the **Southeast Asian country** and the move is in line with the overall **Indian vision** that aspires to guarantee security for all maritime partners.
- This will help in accomplishing the vision of **SAGAR (Security and Growth for All in the Region)** and also in line with the commitment to **build capacities** and **self-reliance** in all our **neighboring countries**.

### SAGAR Initiative

- In 2015, India unveiled a strategic vision for the Indian Ocean i.e. Security and Growth for All in the Region (SAGAR). It is about increasing recognition of the importance of maritime security, maritime commons, and cooperation.
- Through SAGAR, India seeks to deepen economic and security cooperation with its maritime neighbors and assist in building their maritime security capabilities.

## INS Sindhuvir:

- This **diesel-electric Kilo Class submarine** is being **given through the Line of Credit (LOC)**. The sailors of the Myanmar Navy will be trained in underwater combat operations onboard INS Sindhuvir with the help of the Indian Navy.

## Significance:

- **India's military outreach to Myanmar** is important as it comes in the backdrop of the ongoing **military tension along the Line of Actual Control** in Eastern Ladakh between **India and China**.
- The submarine transfer is significant in the backdrop of China supplying two Ming-class diesel-electric submarines to Bangladesh in 2016.

## India-Myanmar Relations:

- **Historical:**
  - ♦ India-Myanmar relations are rooted in shared historical, ethnic, cultural, and religious ties.
  - ♦ As the land of **Lord Buddha**, India is a country of pilgrimage for the people of Myanmar.
- **Geographical proximity:**
  - ♦ The geographical proximity of the two countries has helped develop and sustain **cordial relations** and facilitated **people-to-people contact**.

- ♦ India and Myanmar share a long land border of over **1600 km** and a maritime boundary in the Bay of Bengal.
- ♦ A large population of Indian origin (according to some estimates about 2.5 million) lives in Myanmar.
- **Treaty of Friendship:**
  - ♦ India and Myanmar signed a **Treaty of Friendship in 1951**.
  - ♦ The visit of Prime Minister Rajiv Gandhi in 1987 laid the foundations for a stronger relationship between India and Myanmar.
- **Major Indian Projects in Myanmar**
  - ♦ Upgradation and resurfacing of the 160 km long **Tamu-Kalewa-Kalemyo road**.
  - ♦ Construction and up-gradation of the **Rhi-Tiddim Road in Myanmar**.
  - ♦ India has also been working on the development of the **Sittwe port** in that country and also work is going on a \$484m **Kaladan Multimodal Transport Project**.
- **Growing Military Relations**
  - ♦ The military cooperation between the two countries has been growing. India last year delivered the first batch of **Advanced Light Torpedo (TAL) 'Shyena'** to **Yangon**.
  - ♦ India has already supplied a wide variety of **military hardware** and **software** to **Myanmar**, which ranges from **Islander maritime patrol aircraft, naval gunboats, light-weight torpedoes, and radars to 105 mm light artillery guns, mortars, night-vision devices, grenade-launchers, and rifles**.
  - ♦ The Indian Navy is training Myanmar's sailors at its submarine school **INS Satavahana at Vizag** as well as sending "**mobile training teams**" to Yangon for the last couple of years.
  - ♦ The armies from the two countries have conducted Operation Sunrise to smashing insurgent bases along Indo Myanmar border.
  - ♦ In 2013, the Indian Navy had started **CORPAT Exercise** with **Myanmar** and also carried out with four other regional navies including **Thailand, Indonesia, and Bangladesh**.
- **Commercial and Economic Relations:**
  - ♦ India's imports from Myanmar are dominated by agricultural items (beans, pulses, and forest-based products form 90% of our imports).
  - ♦ India's main exports to Myanmar are primary and semi-finished steel, chemical products, and pharmaceuticals.

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- Myanmar is a member of ASEAN, BIMSTEC, SAARC, and Mekong Ganga Cooperation. Thus, the country stands important for India's Act East Policy.

**Mekong Ganga Cooperation**

MGC is an initiative by six countries – India and five ASEAN countries namely, Cambodia, Laos, Myanmar, Thailand, and Vietnam – for cooperation in the fields of tourism, education, culture, transport, and communication.

**Challenges:**

- **Border:** Indo-Myanmar border is porous and lightly policed which is exploited by terrorist outfits and insurgent groups from the North-Eastern part of India eg. supply of trained cadres, arms trafficking.
- **Bilateral trade** between India and Myanmar still falls short of expectations.
- **Overtime trust deficit** has widened between India-Myanmar because of the Indian reputation for delaying the implementation of various projects.
- **China** has asserted itself through its soft power as well as through its trade and economic relations with Myanmar by **taking up large infrastructure projects**. India has found it difficult to counter Chinese influence in Myanmar.

- **Rohingya Issue** and related immigrant crisis.

**Way Forward:**

- The responsibility of **border management** should be taken proactively by both countries.
- Myanmar is **India's gateway to Southeast Asia** and could be the required impetus to realize India's Act East Policy.
- Myanmar itself is an **emerging consumer market** of 60 million people who have demands for products. India should leverage these **export opportunities**.
- India could enhance its presence in Myanmar in sectors like manufacturing high-end smartphones, exporting cement, furniture, FMCG, energy, telecommunications, healthcare, creating townships, low-cost housing development, ports and logistics, rural electrification, etc.
- **Agriculture** is another sector where India can substantially augment its cooperation with Myanmar in rice research activities, post-harvest technology, agriculture financing, and articulating policies.
- **Infrastructure: India's Kaladan Multimodal Transit and Transport project and India-Myanmar-Thailand Trilateral Highway** have seen many delays. Hence, it can be said that the success of India's Act East Policy will now depend on India's prompt action and pragmatic approach for the completion of projects.



# PAKISTAN ELECTED TO UN HUMAN RIGHTS COUNCIL

Pakistan, China, Russia and Cuba have been elected to the United Nations Human Rights Council.

## About:

- These member states have notorious records of human rights violations.
- A coalition of human rights groups from **Europe, the US, and Canada** called on UN member states to oppose the election of **China, Pakistan, Russia, Saudi Arabia, Cuba, and Uzbekistan**, saying their human rights records make them unqualified.

## About the UN Human Rights Council:

- The Human Rights Council is an **inter-governmental body** within the **United Nations system** made up of **47 States** responsible for the promotion and protection of all human rights around the globe and meets at the **UN Office at Geneva**.
- It has been formed as a substitute to the UN Commission on Human Rights which was being continuously abashed for having states with notorious records of human right violation as its members.
- The Council was created by the United Nations General Assembly on 15 March 2006 by **resolution 60/251**.
- The United States announced its withdrawal from the council in June 2018 partly because it considered the body a forum for hypocrisy about human rights, though also because Washington says the council is anti-Israel.

## Functions:

- It can discuss **all thematic human rights** issues and situations that require its attention throughout the year.
- It also periodically **reviews human rights** in every U.N. member country.
- The Human Rights Council also works with **the UN Special Procedures** established by the former Commission on Human Rights and now assumed by the Council.

## Challenges in UNHRC:

- Many members of the UN are themselves, **systematic human rights offenders**.
- The council **ignores the worst cases of human rights abuses in favor of "softer" topics** like the elderly, children, and the disabled. The detention of political opposition in Cuba, destruction of civil society in Venezuela have not been questioned in UNHRC.

- **Bias against Israel:** Among its ten standing agenda items, the Council has continued a permanent item on Israel's human rights behavior in the Occupied Palestinian Territories (OPT), which is considered to be unfair to Israel.
- **Confusion between OHCHR and HRC and their mandates:** The Office of the United Nations High Commissioner for Human Rights (OHCHR) is often confused with the HRC. It is a separate institution that presents reports independent of the HRC, the recent report on Kashmir being an example.
- **Intrusion into the sovereignty of the states:** It has been a challenge for UNHCR to advocate for human rights and not interfere with the sovereignty of the states.
- **Effectiveness:** It occasionally prioritizes pet projects over common concerns and fails to follow through on the implementation of its own decisions and recommendations. Much of what is debated in the council hardly takes any enforceable form.

## The Role:

UNHRC has played the role of a political platform that aims to ensure that human rights remain a top priority within the UN.

- **Global reach:** UNHRC has a wide mandate which facilitates it to respond to human rights cases across the globe. In doing so, it also brings the members of civil society together for voicing concerns related to human rights in their respective local regions.
- **Special Procedures:** Special Procedures of UNHRC are a universal source of knowledge on human rights themes and country-specific conditions which helps to improve the understanding of human rights law.
- **Universal Periodic Review:** The Universal Periodic Review motivates nation-level dialogues on human rights, and also mandates that every UN member state examines human rights regularly.
- **Condemning the violations:** In the recent past, the resolutions adopted by the UNHRC have highlighted and condemned distinctive violations despite the efforts to the contrary by some members of the HRC.
  - ♦ For example, amid the Arab Spring, the Human Rights Council voted unanimously to suspend Libya's membership.
  - ♦ More recently, the Council did not permit Syria to bid for a seat on grounds of human rights violations and appointed an investigation there.

- **Issue-based coalitions:** There is an increasing number of countries from all parts of the world which have started working together to further human rights, irrespective of their shared history and regional politics. The regional bloc voting practices have become a matter of the past and considered discussion along with collective action is becoming possible.
- **Controversial subject areas:** Controversial subject areas have also been addressed at the HRC, including LGBTIQ rights and religious discrimination.
  - ♦ South Africa's efforts to acknowledge the rights of LGBTIQ faced strong opposition from neighboring countries but it was supported by far-away countries like Brazil, Colombia, the United States, and many others.
- **Role of special rapporteurs:** The experts' mandates (Special Rapporteurs) recommended by UNHRC have resulted in manifested actions on problems ranging from combating torture in Jordan to protecting journalists in Cambodia, decriminalizing blasphemy in the United Kingdom, and reducing prison sentences in China.

#### Impact on India:

- A **recent report by UNHCR on Kashmir**, although talking of both sides of the LoC, focuses mainly on serious violations in

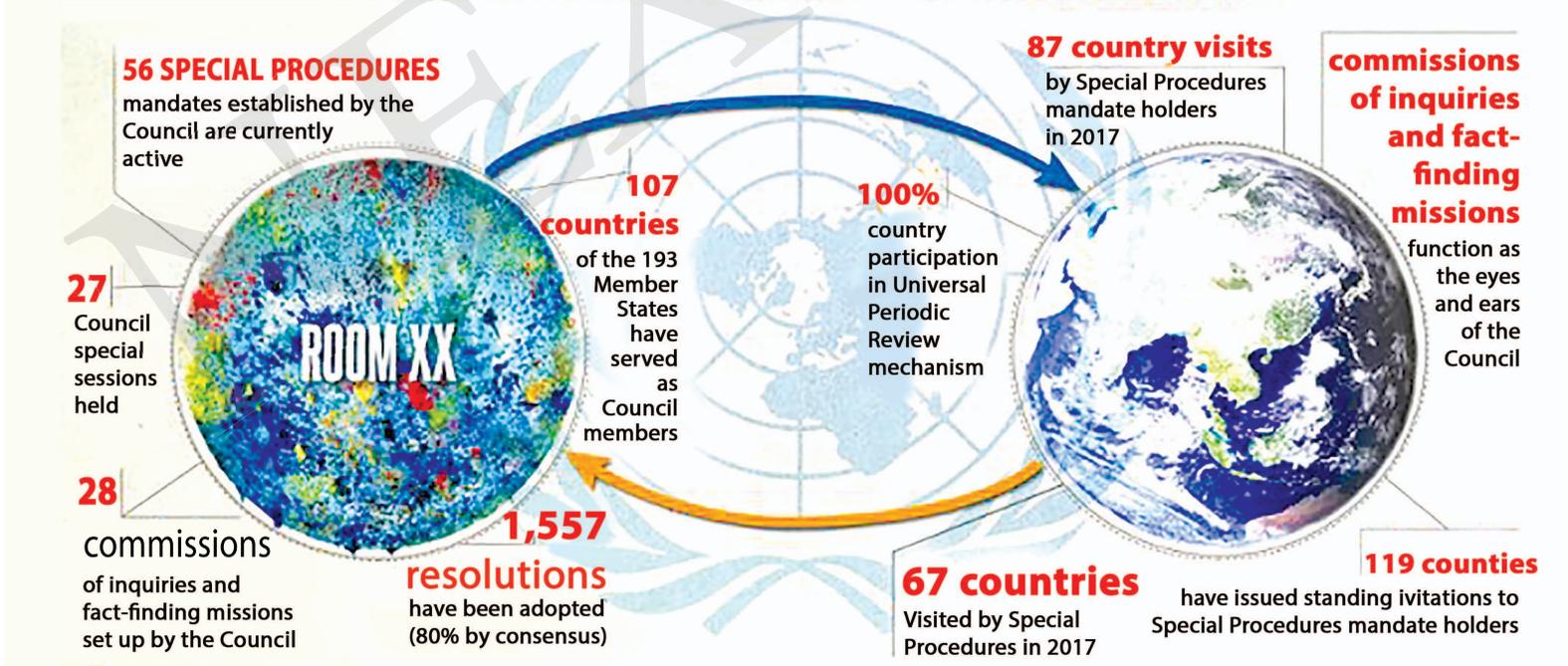
Jammu and Kashmir. India has rejected the report terming it "fallacious, tendentious and motivated", questioning its intent.

#### Way Forward:

- **More emphasis on general issues needed:** More attention should be given to addressing visibly deteriorating human rights situations before they become chronic.
- **Focus on thematic issues:** HRC must formulate necessary regulation on themes such as biotechnology, administration of justice, healthcare, and artificial intelligence, which have significant human rights implications.
- **Ensuring effectiveness:** More needs to be done to ensure that the processes at UNHRC produce more substantial outcomes. Less politicized and more practical exchanges.

In this scenario, states must make an effort to strengthen the UNHRC and come together for deliberations regarding the scope for reform of this institution of global importance. The idea of forsaking it or democratic states walking away from it would be a betrayal of those who are or might one day be, the target of oppression and violence. These people rely on the protection the UN might offer, however imperfect, and rely even more on those committed to human rights to work within the UN to strengthen that protection and make it truly universal.

## UNITED NATIONS HUMAN RIGHTS COUNCIL



# PUBLIC SAFETY ACT

The Supreme Court has asked Jammu and Kashmir administration for clarification on the detaining of former Chief Minister Mehbooba Mufti under the Public Safety Act (PSA).

## About:

- The court was hearing a **habeas corpus petition** filed by Ms. Mufti's daughter. Ms. Mufti was detained on August 5 last year amid the scrapping of provisions of Article 370.
- The Srinagar District Magistrate reasoned that the detention order was based on "**past conduct**" of Ms. Mufti for "**glorifying militants, brazenly inciting religion to divide the people, demoralizing the security forces** and the proclivity to indulge in such behavior in future which would be highly prejudicial to the maintenance of public order".

## What is the Jammu and Kashmir Public Safety Act?

- The **Jammu & Kashmir Public Safety Act (PSA), 1978** is a **preventive detention law**, under which a **person is taken into custody to prevent him or her** from acting in any manner that is **prejudicial** to "the **security of the state** or the **maintenance of the public order**".
- The law was introduced by Sheikh Abdullah (Farooq Abdullah's father) in 1978.
- It is often referred to as a "**draconian**" law.
- It comes into force when administrative order passed by either by Divisional Commissioner or the District Magistrate.
- After the amendments were made to the PSA in 2012, the detention of a person below the age of 18 was strictly prohibited under this Act.
- **Key Provisions:** It allows for administrative **detention for up to two years** "in the case of persons acting in any manner **prejudicial to the security of the State**", and for administrative detention up to **one year** where "any person is acting in any manner **prejudicial to the maintenance of public order**"
  - ♦ Government has to set up an **advisory board within 4 weeks** of the detention order.
  - ♦ Board must determine if there are sufficient grounds for detention **within 8 weeks**.
  - ♦ **Section 22** of the Act protects any action taken "**in good faith**" under the Act.
  - ♦ **Under Section 23 of the Act**, the government is empowered to "make such rules consistent with the provisions of this Act, as may be necessary for carrying out the objects of this Act".
  - ♦ In August 2018, the Act was amended to allow individuals to be **detained under the PSA outside the state as well**.

## Associated Concerns:

- Amnesty International report titled "**Tyranny of a lawless law: Detention without trial**" claimed PSA breached the **International Human rights law**.
- **PSA is used arbitrarily against the activists, journalists, and separatists** who are considered a threat to **law and order** without allowing reconsidering.
- PSA does **not provide for Judicial review** of detentions made despite numerous high court orders. Authorities further issue successive detention orders. Section 8 of the PSA provides a vast number of reasons for detention.
- No distinction is made between minor and major offenses.
- The detained person **does not have the right to move a bail application before the court**, and cannot engage any lawyer to represent him or her the detaining authority.

## Role of courts intervention:

- This administrative preventive detention order can be challenged through a **habeas corpus** petition filed by relatives of the detained person.
- The High Court and the Supreme Court have the jurisdiction to hear such petitions.
- However, if the order is quashed, there is no bar on the government passing another detention order under the PSA and detaining the person again.

## Way Forward:

- Now that the state has become a union territory, PSA should have been **brought in line with the all-India legislation**.
- Regional leaders remain India's best bet in J&K, their **continuing detention will not go well in pursuance of establishing peace and finding a political solution in J&K**.

## Habeas Corpus

- It is a Latin term which means '**to have the body of**'. Under this the court issues an order to a person who has detained another person, to produce the body of the latter before it.
- The court then **examines the cause and legality of the detention**. This writ is a **bulwark of individual liberty against arbitrary detention**.
- The writ of habeas corpus can be **issued against both public authorities as well as private individuals**.

# PLASMA THERAPY DEBATE

An ICMR study has found convalescent plasma was not associated with a reduction in progression to severe Covid-19.

## About:

- Recently published findings on convalescent plasma therapy on Covid-19 after PLACID Trials have triggered a debate over its efficacy.
- The Indian Council of Medical Research (ICMR) has been considering dropping this option from the national guidelines.
- However, in several most-affected states -Maharashtra and Delhi, health authorities continue to push the option.
- While those running plasma blood banks promote it with anecdotal accounts on social media.

## PLACID Trials

- PLACID was a **randomized controlled trial in hospitals spread across 14 states by ICMR.**
- It covered confirmed moderate Covid-19 cases. Half of the affected people were given **Plasma Therapy** and the other half were not, but both received the best standard of care.

## Results of PLACID Trials

- Progression to severe disease or death at 28 days after enrolment was almost the same in both kinds of patients (19% in those who received plasma therapy and 18% in those who were not).
- Shortness of breath and fatigue on day 7 was lower in those who received the therapy.
- Resolution of fever and cough did not differ between the two groups.

## Plasma Therapy Trials in Other Countries:

- In **China**, a controlled trial of patients with severe Covid-19 reported no effect of convalescent plasma treatment in terms of time to clinical improvement.
- In the **Netherlands**, the ConCOVID trials could not find any effect on mortality or disease severity.

## Risks involved and issues in Plasma Therapy:

- There have been cases of sale of convalescent plasma in the **black market.**
- The therapy itself involves **resource-intensive** processes such as plasma storage and measurement of neutralizing antibodies.
- **A limited number of institutes in India** can undertake these procedures under quality conditions. Thus ensuring quality could be another issue.

- The non-immune components of convalescent plasma (e.g. proteins) may have potential harm in the recipient and may cause **adverse reactions in the body.**

## Way Forward:

- Evidence is still emerging in the best therapeutic options for COVID. For example, **Remdesivir was sanctioned** as a drug of choice by the US drug regulator, while the World Health Organization has found it had little or no effect on COVID mortality.
- Experts said the use of convalescent therapy has saved some lives but concerns have been raised by the PLACID trial.
- Thus, it is yet too **early** to establish a best practice, but, indiscriminate use of such therapies shall be avoided.

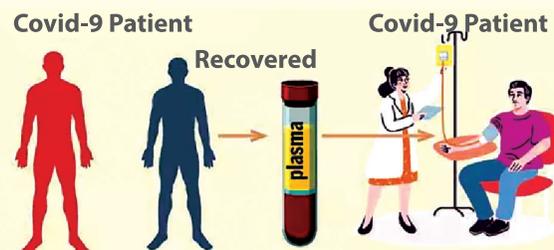
- **Plasma** is the single largest component of human blood, and is about 55 percent of the blood.
- It contains water, salts, enzymes, antibodies and other proteins. It is the clear liquid portion of blood that remains after red blood cells, white blood cells, platelets and other cellular components are removed.

**Convalescent plasma:** It is extracted from the blood of patients who have recovered from an infection.

- It is a **source of antibodies** against the same infection. It is used to treat other affected people.
- For Covid-19, this has been one of the treatment options.

## WHAT IS PLASMA THERAPY AND HOW IT WORKS

Plasma therapy involves transfusing plasma retrieved from the blood of people who have recovered from Covid-19 into people suffering from the disease.



- Once a person recovers from Covid-19, he/she develops antibodies, found in plasma or liquid part of blood.
- Extremely simple process. Only Plasma is retrieved from the donor's blood and the rest of the blood is returned.

# NOBEL PRIZE IN CHEMISTRY

Emmanuelle Charpentier of France and Jennifer Doudna of the U.S. won the Nobel Chemistry Prize for CRISPR-Cas9.

## About:

- Charpentier, 51, and Ms. Doudna, 56, are just the sixth and seventh women to receive the Nobel Prize in Chemistry.
- This is the **first time** a Nobel science prize has gone to a **women-only team**.

## What is CRISPR-Cas9?

- CRISPR-Cas9 is a recent approach to genome editing, which is short for **clustered regularly interspaced short palindromic repeats** and CRISPR-associated protein 9.
- It was adapted from a naturally occurring genome editing system in bacteria.
- It is **faster, cheaper, more accurate, and more efficient** than other existing genome editing methods.
- CRISPR is the DNA-targeting part of the system which consists of an RNA molecule, or 'guide', designed to bind to specific DNA bases through complementary base-pairing.
- The protein Cas9 (or "CRISPR-associated") is an enzyme that acts like a pair of molecular scissors, capable of cutting strands of DNA.
- It is the simplest yet powerful tool for editing genomes.

## Arguments against Gene Editing:

- **Safety:** Due to the possibility of off-target effects (edits in the wrong place) and mosaicism (when some cells carry the edit but others do not), safety is of primary concern.
- **Against order of nature:** Creating children with preferred traits raises bio-ethical concerns as it goes against natural process.
- Further, the implications of introducing modified genomes into the human gene pool are vastly unknown.
  - In 2018 in China, scientist He Jiankui used CRISPR to create what he called the **first gene-edited humans**.
- **Informed consent:** In case of embryos, it is impossible to obtain informed consent for germline therapy; worries about the possibility of obtaining truly informed consent from prospective parents as long as the risks of germline therapy are unknown.
- **Justice and Equity:** There is concern that genome editing will **only be accessible to the wealthy** and will increase existing disparities in access to health care and other interventions. Some worry that taken to its extreme, **germline editing** could create classes of individuals defined by the quality of their engineered genome.

- **Genome-Editing Research Involving Embryos:** Many people have moral and religious objections to the use of human embryos for research. Public funds cannot be used for any research that creates or destroys embryos.

## Arguments in favour of Gene Editing:

- Gene editing has the potential to cure some diseases or disorders and also to prevent diseases.
  - If done on reproductive cells, gene therapy could keep children from carrying unfavourable genes.
- Genetic engineering can be used in **agriculture**, primarily in genetically modified (GM) crops (also known as GMO genetically modified organisms).
  - GM crops have been designed to make crops resistant to herbicides and pesticides.
  - In the future genetic enhancement could be used to create crops with greater yields of nutritional value and selective breeding of farm stock, race horses, and show animals.
- Genetically engineered bacteria and other microorganisms are currently used to produce human **insulin, human growth hormone**, a protein used in blood clotting, and other pharmaceuticals.
- **Enhance Humanity:** It can enhance certain characteristics of people such as intelligence, beauty, strength, endurance, and maybe certain personality and behavioural aspects.
  - Currently, people are already trying to enhance such characteristic by healthy diet, exercise, education, cosmetics, and even plastic surgery.
- **Reproductive Freedom:** It is also a matter of basic reproductive freedom. We already feel free to pick a mate partly on the basis of the possibility of providing desirable children.
  - Therefore, it is argued that parents should also have the freedom to give their children the best genes they can.

## Way Ahead:

- **Limiting its usage to treatment only:** The most promising use of the CRISPR technology is in treatment of diseases. For example, in Sickle Cell Anaemia, a single gene mutation makes the blood sickle-shaped. This mutation can be reversed using gene editing technology.
- **Prevent any unethical practice:** All efforts must be taken to preserve the natural order of humanity and people must be allowed to design the characteristics of their babies.

# 1

# ECONOMY

## INDIA'S FIRST SEAPLANE PROJECT

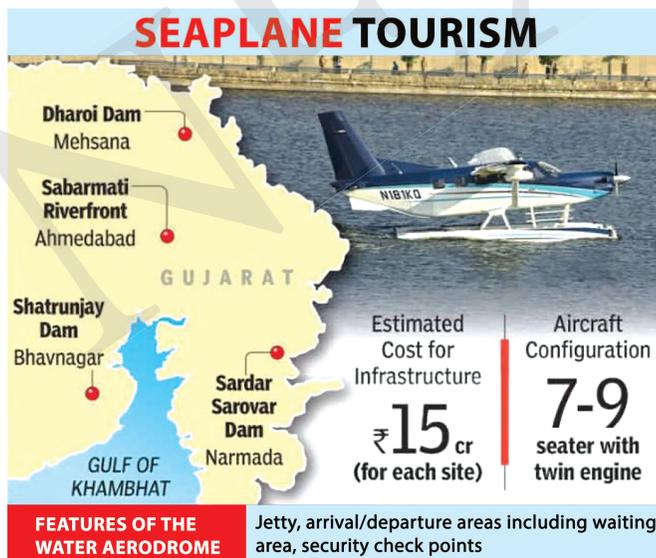
*India's first seaplane service has been started in Gujarat.*

### About:

- The seaplane has been launched on the birth anniversary of Sardar Vallabhai Patel. This will be the first of the five seaplane services to be launched in India.
- It will connect the **Sabarmati River** in **Ahmedabad** to the **Statue of Unity** in **Kevadia** in the **Narmada district**.

### What is a Seaplane?

- A seaplane is a **fixed-winged** airplane designed for taking off and landing on water.
- It offers the public the **speed of an airplane** with the **utility of a boat**.
- There are two main types of seaplanes: **flying boats (often called hull seaplanes)** and **floatplanes**.
- A **flying boat** is a fixed-winged seaplane with a hull, allowing it to land on water, that usually has no type of landing gear to allow operation on land.
- It differs from a **floatplane** as it uses a purpose-designed fuselage which can float, granting the aircraft buoyancy.



### India' Seaplane Project:

- The Airports Authority of India (AAI) has requested state governments of Gujarat, Assam, Andhra Pradesh, and

Telangana and the administration of Andaman & Nicobar to propose potential locations for setting up water aerodromes to boost the tourism sector.

- In 2019, the Centre approved flights from six water airports that include Shatrunjay Dam (Gujarat), Guwahati riverfront and Umrangso reservoir (Assam), and Nagarjuna Sagar (Andhra Pradesh), **under the third round of Ude Desh Ka Aam Nagrik (UDAN) scheme**.
- The routes awarded for seaplane operations include Sabarmati riverfront to Statue of Unity and Shatrunjay Dam; Guwahati riverfront to Umrango reservoir, Jorhat and Shillong (Meghalaya), and Nagarjuna Sagar to Vijayawada and Hyderabad (Telangana).

### Benefits:

- It will give a boost to the **tourism** sector.
- It will contribute to **social infrastructure** facilities in the proposed areas.
- The project will generate **employment** opportunities.
- During seaplane operations, there will be turbulence created in the water while takeoff and landing of seaplanes. This will lead to the **mixing of oxygen in the water**, which will have a positive impact on the aquatic ecosystem.

## NATIONAL AUTHORITY FOR RECYCLING OF SHIPS

*Union government has established National Authority for Recycling of Ships.*

### About:

- In 2019, the Government had passed **The Recycling of Ships Bill, 2019** which talked about **setting up a national authority** that will monitor all activities related to ship recycling.
- Thus, the authority has been established under Section 3 of the Recycling of Ships Act, 2019.
- The Directorate General of Shipping will be now notified as National Authority for Recycling of Ships.
- Under the Act, India has acceded to the **Hong Kong Convention for Ship Recycling** under **International Maritime Organization (IMO)**.
- DG Shipping is a representative of India in the IMO and enforces all its conventions.

**National Authority on Shipping:**

- The **National Authority of Ship Recycling** will be set up in Gandhinagar, Gujarat.
- The location of the office will benefit the Ship Recycling yard owners situated in Alang, Gujarat which is home to Asia's largest ship breaking and ship recycling industry in the world.
- It will be the apex body, which is authorized to administer, supervise, and monitor all activities relating to ship recycling.
- DG Shipping will be the final authority for the various approvals required by the Ship-Recycling yard owners and State Governments.

**Hong Kong Convention for Ship Recycling:**

- The **International Maritime Organization (IMO)** adopted the Hong Kong International Convention for the **Safe and Environmentally Sound Recycling of Ships in 2009**.
- It aims at ensuring that ships being recycled after reaching the end of their operational lives do not pose any unnecessary risks to human health, safety, and the environment.
- Its **broad objectives** are to address all the issues around ship recycling, including the presence of environmentally hazardous substances such as asbestos, heavy metals, hydrocarbons, ozone-depleting substances, and others.

**India and Ship Recycling:**

- India is the leader in the global ship recycling industry, with a share of over 30% of the market and it remains the leading market for ship-wrecking globally, with the **Alang-Sosiya ship-breaking yard in Gujarat handling around 450 ships every year**.
- As of 2018, India handles around five million gross tonnages (MnGT) annually, which is around a 25% share of the world's ship recycling industry. The government plans to nearly double this by 2024, at around nine MnGT.

**International Maritime Organization(IMO):**

- The International Maritime Organization(IMO) is a **specialized agency** of the United Nations (UN).
- It is a **global standard-setting authority** with the responsibility to improve the safety and security of international shipping and prevention of marine and atmospheric pollution by ships.
- There is no enforcement mechanism to implement the policies of the IMO.
- Its main role is **to create a regulatory framework** for the shipping industry that is fair and effective, universally adopted, and universally implemented.
- It is also involved in legal matters, including liability and compensation issues and the facilitation of international maritime traffic.
- It was established through a Convention adopted under the auspices of the United Nations in Geneva on 17 March 1948 and met for the first time in January 1959.

- It currently has 174 Member States and 3 associate members.
- India joined the IMO in 1959.

**UMANG APP**

*A new facility has been started on Unified Mobile Application for New-age Governance (UMANG) App.*

**About:**

- The Employees Provident Fund Organization (EPFO) has started this facility which enables members of **the Employees' Pension Scheme (EPS) 1995** to apply online for **Scheme Certificates**.
- **Scheme certificates** are issued to members who withdraw their Employees' Provident Fund (EPF) contribution but wish to retain their membership with EPFO, to avail pension benefits on the attainment of retirement age.
- Members become eligible for pension only if they have been, cumulatively, a member of the EPS, 1995 for at least 10 years.
- Upon joining a new job, the Scheme Certificate ensures that previous pensionable service is added to pensionable service rendered with the new employer thereby, increasing the number of pension benefits.
- The Scheme Certificate is useful for family members to avail family pension, in case of the untimely death of the eligible member.
- The online application will help members avoid the unnecessary hardship of physically applying for it, especially during pandemic times, and will also eliminate unnecessary paperwork.

**UMANG App:**

- It is a unified, secure, multi-channel, multi-platform, multi-lingual, multi-service mobile app.
- It has been developed by **the Ministry of Electronics and Information Technology (MeitY)** and the **National e-Governance Division (NeGD)** to drive mobile governance under **Digital India**.

**Employees' Provident Fund Organization (EPFO):**

- It is a **government organization** that manages the **provident fund and pension accounts** for the workforce engaged in the **organized sector** in India.
- **It implements the Employees' Provident Fund and Miscellaneous Provisions Act, 1952**, and is administered by the **Ministry of Labor** and Employment.
- **EPS** is a social security scheme that was launched in 1995 and is provided by EPFO.
- It makes provisions for pensions for the employees in the organized sector after retirement at the age of 58 years.

## WORLD FOOD PROGRAMME (WFP)

*The Nobel Peace Prize for 2020 has been awarded to the World Food Programme (WFP).*

### What is WFP?

- The Nobel Peace Prize has been given to World Food Programme (WFP) for its efforts to combat hunger, bettering conditions for peace in conflict-affected areas, and preventing the use of hunger as a weapon of war and conflict.
- World Food Program was established in 1961 by **the Food and Agriculture Organisation (FAO) and the United Nations General Assembly (UNGA)** and became a full-fledged UN program in 1965 with headquarters in Rome, Italy.
- It is a member of the United Nations Development Group and part of its Executive Committee.
- The objectives of the World Food Programme are:
  - ♦ Save lives and protect livelihoods in emergencies.
  - ♦ Support food security and nutrition and (re)build livelihoods in fragile settings and following emergencies.
  - ♦ Reduce risk and enable people, communities, and countries to meet their food and nutrition needs.
  - ♦ Reduce under-nutrition and break the inter-generational cycle of hunger.
  - ♦ Zero Hunger in 2030.
- It is governed by an Executive Board, which consists of 36 member states.
- It focuses on emergency food aid as well as relief and rehabilitation, development aid, and special operations, such as making food systems more resilient against climate change and political instability.

### WFP's Role in India:

- It has been working in India since 1963, two years after its establishment. Apart from **focusing on reforms in the Targeted Public Distribution System**, it provides policy inputs, advocacy, and technical assistance for improving access to food.
- It has proposed some unique initiatives like **Automatic Grain Dispensing Machine (Annapurti)** and Mobile Storage Units for the effective implementation of TPDS. Annapurti allows beneficiaries to withdraw their food grain quota accurately and at a time of their choice.
- According to WFP India, it has completed a pilot on rice fortification used in the government's Mid-Day Meals scheme in Varanasi.
- Even during the pandemic, WFP India has worked with the central and state governments. For instance, it signed an MoU with the Uttar Pradesh State Rural Livelihood Mission.

## ECONOMIC STIMULUS

*The Union Finance Minister unveiled new proposals to stimulate demand in the economy.*

### About:

- The government has announced a twin set of measures to **boost consumption demand** and **capital expenditure (Capex)**, which will result in quick spending of more than **Rs. 1 lakh crore** by March 2021.
- Earlier the various streams of the Atmanirbhar Package were introduced into the economy to target the needy section of the economy addressing their essential requirements.
- This package will aim at promoting the consumption of high-value items by those employees whose salaries and jobs have not been affected by the Covid-19 pandemic.

### Consumer Spending Proposal:

- This part includes an **LTC cash vouchers scheme** and a **special festival advance scheme**.
- **The Leave Travel Concession (LTC) Cash Vouchers scheme:**
  - ♦ Leave Travel Concession (LTC) is nothing but a type of salary component where your employer is providing some yearly benefit to travel with your family.
  - ♦ Central government employees get LTC in a block of four years, one for the destination of choice and home town or two for home town.
  - ♦ Under this, the air or rail fare is reimbursed as per pay scale/entitlement. Also, leave encashment of ten days (pay+dearness allowance) is paid.

## A LOOK AT THE MEASURES

**TO LIFT CONSUMER DEMAND**

**LTC CASH VOUCHER SCHEME**

- Cash equivalent to leave encashment plus three times the ticket fare, for which three times the ticket fare, for which three slabs will be offered.
- Money to be spent on items with GST levy of 12% or more

**ESTIMATED DEMAND GAIN:**  
**₹ 19,000 cr**  
If only central/central PSE staff get it, Rs 9,000 cr if states offer scheme too

**SPECIAL FESTIVAL SALARY ADVANCE**

- ₹ 10,000 to be offered as salary advance, to be deducted in 10 installments without interest.
- Advance available till March 31 in Rupay cards, cannot be withdrawn as cash.

**ESTIMATED DEMAND GAIN:**  
**₹ 4,000 cr; ₹ 8,000 cr**  
If state governments offer it too

**Who benefits:** Central government employees. State governments and private companies can match these moves but are not under obligation to do so

**TO SPUR CAPITAL EXPENDITURE**

**₹12,000**  
crore in special interest-free 50-year loans to state to help Capex spending

**₹25,000**  
Crore in addition to Budget outlay to be made available for infra projects

- However, employees will not be able to avail of the LTC in the 2018-21 year block due to the ongoing pandemic and this is where the LTC will benefit government employees.

- ◆ Instead of one LTC during 2018-21, employees will receive a full cash payment on leave encashment and fare.
- ◆ An employee opting for this scheme will have to buy goods and services worth three times the fare and one time leave encashment before 31st March 2021.
- ◆ The money is to be spent on goods attracting Goods and Services Tax (GST) of 12% or more and only digital payments will be allowed.
- ◆ If the amount is not spent, then the employee will have to pay tax as per the marginal tax rate on the LTC component.
- ◆ The same benefits will be available to private-sector employees if the employers decide to offer the scheme to their employees.

### Special Festival Advance Scheme:

- All central government employees will get an interest-free advance of Rs. 10,000 that will be recovered in 10 installments. It will be given in the form of a pre-loaded RuPay card of the advance value.

### Capital Expenditure Proposal:

- Special assistance will be provided to states in the form of **interest-free 50-year loans of Rs 12,000 crore** with certain conditions.
- The Centre has proposed an additional budget of Rs 25,000 crore for capital expenditure on roads, defense infrastructure, water supply, and urban development.

#### What is Capital Expenditure?

- **Government expenditure** or public expenditure can be categorised into 2 categories, namely capital and revenue expenditure.
- **The capital expenditure** are those government expenditures which result in the creation of physical or financial assets or reduction in financial liabilities.
- **The revenue expenditure** are those expenditure which are incurred for purposes of day to day expenses rather than the creation of physical or financial assets of the central government.

### Significance:

- Through the LTC plan, the government expects a demand generation of Rs 28,000 crore in the economy.
- The move will boost GST collections for the second half of the year which have been severely impacted due to Covid-19.
- If the same benefits are available to private-sector employees there will be a significant improvement in GST collections and a rise in consumption in the economy.
- There will better reallocation of resources under various ministries through CAPEX.

### Concerns:

- **Too many restrictions** are placed on consumer spending via the LTC plan since they can spend on goods that attract 12% of GST and only through the digital mode of payment.
- The **amount of funds** released through capital expenditure is **way too little** to have a significant impact on reviving growth.
- Since measures are largely focussing on spending by government employees, the visible impact could be limited.

### Way Forward:

- The strategic intent behind the schemes is to direct spending towards items for which demand had slumped during the period of lockdowns. Consumption-led growth can arguably lead to a slackening of future growth if it entails growing imbalances due to limits to capacity creation, and rising debt burdens, particularly for households.

## PUBLIC DEBT RATIO IN INDIA

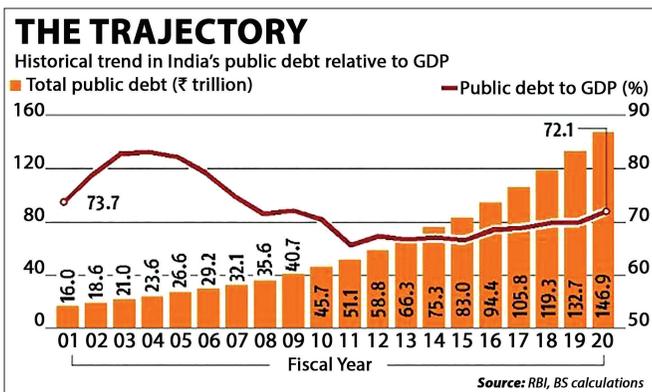
*IMF has predicted that India's public debt ratio will jump to almost 90%, an increase by 17 percentage points.*

### About:

- India's public debt ratio has remarkably remained stable at about 70% of the GDP since 1991 and it will be the first time since then that it will see a rise owing to the hardships of the pandemic.
- According to the **International Monetary Fund (IMF)**, the increase in public spending, in response to COVID-19, and the fall in tax revenues and economic activity, will make public debt jump up by 17 percentage points to almost 90 percent of GDP.
- Going forward it is projected to stabilize in 2021, before slowly declining up to the end of the projection period, in 2025.
- Broadly speaking the pattern of public debt in India is close to the norm around the world.

### What is Public Debt Ratio:

- It is the ratio between a country's government debt and its gross domestic product (GDP).
- It broadly measures the financial leverage of an economy.
- **Stable P/D Ratio:** A country can continue paying interest on its debt-without refinancing, and without hampering economic growth.
- A country with a **high debt-to-GDP ratio** typically has trouble paying off external debts which are any balances owed to outside lenders.
- **A low debt-to-GDP ratio** indicates an economy that produces and sells goods and services sufficient to pay back debts without incurring further debt.



### What is Public Debt:

- It is also referred to as government debt.
- It represents the total outstanding debt (bonds and other securities) of a country's central government and is often expressed as a ratio of Gross Domestic Product (GDP).
- **It has to be paid from the Consolidated Fund of India.** The term is also used to refer to overall liabilities of central and state governments, but the Union government clearly distinguishes its debt liabilities from the states'.
- **The sources of public debt** are dated government securities (G-Secs), treasury bills, external assistance, and short-term borrowings.

### Types of Central Govt Liabilities:

- In India, total Central Government Liabilities constitutes the following three categories:
  - ♦ Internal Debt.
  - ♦ External Debt.
  - ♦ Public Account Liabilities.
- Public Debt in India includes only Internal and External Debt incurred by the Central Government.
- **Internal Debt** includes liabilities incurred by resident units in the Indian economy to other resident units, while **External Debt** includes liabilities incurred by residents to non-residents.
- The second type of liabilities is called **public accounts**.

### Management of Public Debt:

- According to the Reserve Bank of India Act, 1934, **the RBI is both the banker and public debt manager for the government.** The RBI handles all the money, remittances, foreign exchange, and banking transactions. The Union government also deposits its cash balance with the RBI.
- The Union government's liabilities account for a little over 46% of India's gross domestic product (GDP).
- However, if the public debt is calculated as **general government liabilities**, which also includes the liabilities of states, this goes up to 68% of the country's GDP.

- The Union government deposits its cash balance with the RBI. However, of late, there is a demand for creating a specialized agency for managing public debt as exists in some advanced economies. For instance, the Niti Aayog has advocated the creation of a **separate public debt management agency (PDMA)**.
- According to **N.K. Singh Committee** (for reviewing Fiscal Responsibility and Budget Management Act 2003), **the combined public debt to GDP ratio of centre and states** should be brought down to 60% by 2023, comprising 40% for the centre and 20% for states.

### FERTILIZER SUBSIDY IN INDIA

*The government proposes to limit the amount of fertilizers each farmer can buy during a cropping season.*

### What is the Fertilizer Subsidy?

- It is the MRPs (maximum retail price) at which the farmers buy the fertilizers which are below their normal supply-and-demand-based market rates or what it costs to produce/import them.
- For example, the MRP of neem-coated urea, for instance, is fixed by the government at Rs 5,922.22 per tonne, whereas its average cost-plus price payable to domestic manufacturers and importers comes to around Rs 17,000 and Rs 23,000 per tonne, respectively.
- The difference is footed by the Centre as a subsidy.

### How Farmers Receive Subsidies?

- The subsidy goes to fertilizer companies, although its ultimate beneficiary is the farmer who pays MRPs less than the market-determined rates.
- Companies, until recently, were paid after their bagged material had been dispatched and received at a district's railhead point or approved godown.
- Since March 2018, a **new direct benefit transfer (DBT) system was introduced**, wherein subsidy payment to the companies would happen only after actual sales to farmers by retailers.
- Each retailer across India now has a point-of-sale (PoS) machine linked to the Department of Fertilizer's e-Urvarak DBT. Anybody buying subsidized fertilizers is required to furnish his/her Aadhaar unique identity or Kisan Credit Card number and the quantities of the individual fertilizers purchased, along with the buyer's name and biometric authentication, have to be captured on the PoS device.
- Only upon the sale getting registered on the **e-Urvarak platform** can a company claim subsidy, with these being processed every week and payments remitted electronically to its bank.

**Present Loopholes:**

- At present, **the Centre is following a “no denial” policy.** Anybody, non-farmers included, can purchase any quantity of fertilizers through the PoS machines and this policy allows for bulk buying by unintended beneficiaries, who are not genuine or deserving farmers.
- There is **a limit of 100 bags that** an individual can purchase **at one time**, it does not stop anyone from buying any number of times.
- Therefore, govt is rethinking its strategy for the fertilizer sector subsidy.

**Other Issues Related to Fertilizer Subsidy in India:**

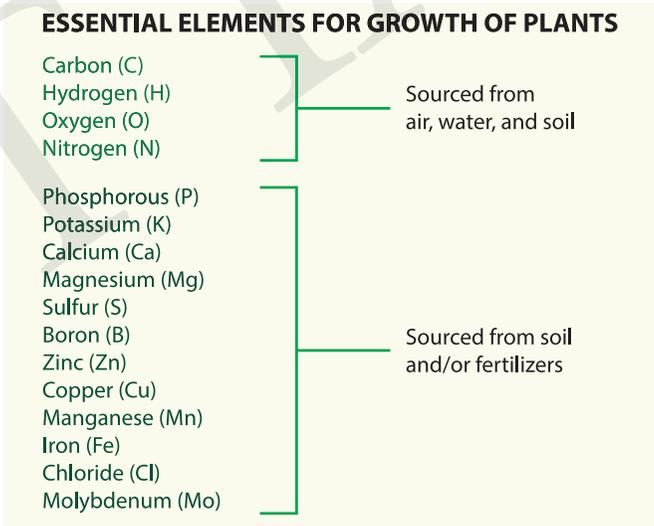
- **Heavy fiscal burden:** The total outgo on fertilizer subsidy alone in 2018-19 was more than Rs. 70,000 crores.
- **Environmental Effects and decline in Soil Fertility:** Indiscriminate use of fertilizers (recommended ratio of NPK fertilizer is 4:2:1 while actual usage is 8:3:1. Similarly, urea consumption has increased to 60% in 2018 from 55% in 2010-11) harm the soil fertility, biodiversity, and also leads to eutrophication and bio-accumulation/biomagnification.
- **No benefits to the targeted groups:** Fertilizer subsidies are generally cornered by the manufacturers and the rich farmers of Punjab, Haryana, and Western UP.
- **Low profitability of the fertilizer industry:** The fertilizer sector worked in a highly regulated environment with the cost of production and selling prices being determined by the Government. Due to this fertilizer industry suffered from low profitability as compared to other sectors.
- **Unreasonable MRPs:** Under NBS policy companies were allowed to fix the MRP on their own. The intention behind the introduction of NBS was to increase competition. However, the prices of P&K fertilizers have gone up substantially and doubts have been raised about the reasonableness of the prices fixed by the companies.
- **Stagnation in agricultural productivity:** Due to rampant overuse of fertilizers it was observed that the marginal response of agricultural productivity to additional fertilizer usage has fallen sharply, leading to near-stagnation in agricultural productivity.

**Policy Suggestions and Way Forward:**

- **Fertilizer use is not an end in itself:** Fertiliser use is only a means of achieving increased food production.
- **Rationalize fertilizer subsidy:** There is a need to revamp fertilizer delivery and take a fresh look at input subsidies in agriculture, to boost much-needed investment, and reorient the cropping pattern to resource efficiency.
- **Consider the import of urea:** Given the uncompetitive local production of urea, and distortionary effects of subsidy

policy, domestic production of urea can be discarded and instead it can be imported from regions where natural gas is abundant and thus costs of production are low (for example, Gulf nations or Russia).

- We can also enter into long-term contracts with them; in years when global prices shoot up, India can export urea.
- **A direct cash transfer to farmers:** Instead of subsidizing fertilizers, direct cash transfers can be made to farmers. With fixed amounts, farmers will likely cut down their usage of fertilizers in the interest of soil health as prices of fertilizers will be decontrolled. **Shanta Kumar Committee** recommended a direct cash subsidy of 'about Rs 7,000/ha' to farmers while deregulating the fertilizer sector.
- **Deregulate gas pricing:** A lower gas price for power plants lowers the power subsidy while increasing the fertilizer one. If the government encouraged more local production of gas and not insist more of it be sold to power plants, local production costs of urea could also fall.



**N-P-K RATIO**

REFERS TO .... the ratio of nitrogen (N), phosphorus (P), and potassium (K) in the fertilizer product

**EXAMPLE**

<b>8</b>	<b>2</b>	<b>6</b>
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**ROLE OF NUTRIENTS**

<p><b>N</b> Nitrogen</p> <p>help produce lush, green leaves</p>	<p><b>P</b> Phosphorus</p> <p>stimulates root development</p>	<p><b>K</b> Potassium</p> <p>guards plants against diseases</p>
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Total Nitrogen (N) .....	8%
Available Phosphate (P2O5) .....	2%
Soluble Potash (K2O) .....	6%

## WORLD ECONOMIC OUTLOOK

*IMF releases its World Economic Outlook titled: 'A long and difficult ascent'.*

### About:

- The report titled 'A long and difficult ascent' sums up the economic challenges ahead.
- The IMF's economists have sought to make forecasts for world output through 2020, 2021, and into the medium term.
- The global economy is projected to shrink 4.4% this year, reflecting a less severe contraction than the 5.2% drop estimated in June. The output is seen rebounding at a marginally slower 5.2% pace in 2021.
- The IMF has based its revision on better-than-anticipated second-quarter GDP out-turns, mostly in advanced economies.

### Challenges highlighted by the Report:

- The IMF pointed out that even as the world economy ascends out of the depths, there remains the danger of resurgence in infections.
- This danger is prompting European countries to reimpose at least partial closures.
- This is in response to the risks associated with predicting the pandemic's progression, the unevenness of public health responses, and the extent to which domestic activity can be disrupted.

### What will be the Impact of the Pandemic?

- Labour markets will take time to heal
- Investment is held back by uncertainty and balance sheet problems
- Lost schooling impairs human capital.

### What is the need of the Hour?

- The IMF observed that the pandemic is set to widen inequality between economies and within nations. So, the IMF has urged greater international cooperation.
- All countries must work closely to ensure that new treatments and vaccines are made available to all.
- This is because wider and faster availability of medical solutions could boost global income by almost \$9 trillion by the end-2025.
- With no visibility yet on vaccine availability, the IMF has stressed direct income support for the most vulnerable and regulatory forbearance for stressed but viable firms.

### About the World Economic Outlook Report:

- It is a survey by the IMF that analyzes and predicts global economic developments during **the near and medium-term**.

- The report projects the state of the global economy highlights risks and uncertainty that threaten growth and the developments in the global financial markets and economic systems.
- It is usually prepared **twice a year** in **April and October** and is used in meetings of the International Monetary and Financial Committee.

### International Monetary Fund (IMF):

- It is an organization working to foster **global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth**, and reduce poverty around the world.
- The formation of the IMF was initiated in **1944** at the **Bretton Woods Conference** and it came **into operation on 27th December 1945**.
- It is one organ of the Bretton Woods Twin and presently has 189 members.
- Its primary purpose is to ensure the stability of the international monetary system, the system of exchange rates and international payments that enables countries (and their citizens) to transact with each other.
- Its mandate was updated in 2012 to include all macroeconomic and financial sector issues that bear on global stability.
- **The Governing Bodies of IMF includes**
  - ◆ Board of Governors
  - ◆ Ministerial Committees
  - ◆ Executive Board
- The functions of the International Monetary Fund can be broadly divided into three categories:
  - ◆ **Regulatory functions:** It functions as a regulatory body and as per the rules of the Articles of Agreement, it also focuses on administering a code of conduct for exchange rate policies and restrictions on payments for current account transactions.
  - ◆ **Financial functions:** It provides financial support and resources to the member countries to meet short term and medium term Balance of Payments (BOP) disequilibrium.
  - ◆ **Consultative functions:** It is a center for international cooperation for the member countries. It also acts as a source of counsel and technical assistance.

## MULTI-MODAL LOGISTIC PARK

*The country's first Multi-modal Logistic Park will be developed at Jogighopa in Assam.*

### About:

- The multi-modal logistics park will be developed under the **ambitious Bharatmala Pariyojna** with an estimated cost of ₹694 crores.

- It will **provide direct connectivity** with National Highway 17, the proposed Jogighopa waterway terminal on the Brahmaputra, the newly constructed Rupsi and Guwahati airports as well as the main railway route.
- India will be able to establish **trade with Bangladesh** through the Jogighopa waterway terminal.
- It will reduce trade costs by 10% and have a cargo capacity of 13 million metric tons (MMT) per year and will act as a growth engine for the economic development of the state and the north-east by providing direct and indirect jobs.

### Bharatmala Pariyojana:

- Bharatmala Pariyojana is an umbrella program for the highways sector envisaged by the Ministry of Road Transport and Highways.
- Under Phase-I of Bharatmala Pariyojana, implementation of 34,800 km of national highways in 5 years (from 2017 to 2022) has been approved at an estimated outlay of Rs. 5,35,000 crores.
- Phase-II envisages around 48,000 km of road network across India by 2024.
- **Objectives:**
  1. To optimize the efficiency of freight and passenger movement across India by bridging critical infrastructure gaps through effective interventions;
  2. To generate a large number of direct and indirect employment opportunities in the construction and infrastructure sector;
  3. To connect 550 districts in the country through national highway linkages.
- **Features:**
  1. Improvement in the efficiency of existing corridors through the development of Multimodal Logistics Parks and elimination of chokepoint;
  2. Improving connectivity in the North East and increasing harmony with Inland Waterways;
  3. Emphasis on the use of scientific and technological planning;
  4. Satellite mapping of the corridor;
  5. Delegation of powers for successful completion of Phase I by 2022.
- **Project Categories under the scheme:**
  - ♦ **Economic Corridors:** These are integrated networks of infrastructure within a geographical area designed to stimulate economic development.
  - ♦ **Greenfield Projects:** They lack constraints imposed by prior work on the site. Typically, it entails development on a completely vacant site and architects start completely from scratch.

- ♦ **Brownfield Projects:** They carry constraints related to the current state of the site and might be contaminated or have existing structures that architects have to tear down or modify in some way before the project can move forward.
- ♦ **Multimodal Logistics Parks:** These are a key policy initiative of the Government of India to improve the country's logistics sector by lowering overall freight costs, reducing vehicular pollution and congestion, and cutting warehousing costs.
- ♦ **Chokepoint:** It is a single point through which all incoming and outgoing network traffic is funneled and hence, leads to congestion and traffic.



## NATURAL GAS MARKETING REFORMS

*The Cabinet Committee on Economic Affairs (CCEA) has approved the reforms to push the usage of natural gas.*

### About:

- **Natural gas** is a fossil energy source that formed deep beneath the earth's surface.
- The largest component of natural gas is methane, a compound with one carbon atom and four hydrogen atoms (CH<sub>4</sub>).
- Natural gas is found with **petroleum deposits** and is released when crude oil is brought to the surface.
- It can be used as a domestic and industrial fuel.
- Natural gas also contains smaller amounts of natural gas liquids (NGL, which are also hydrocarbon gas liquids), and nonhydrocarbon gases, such as carbon dioxide and water vapor.
- Natural gas is used as a fuel and as a feedstock, with demand largely dependent on the fertilizer industry (28%), power (23%), city gas distribution entities (16%), refinery (12%), and petrochemicals (8%) industries.
- Russia, Norway, the UK, and the Netherlands are the major producers of natural gas.

- In India, Jaisalmer, Krishna Godavari delta, Tripura and some areas offshore in Mumbai have natural gas resources.
- **The Ministry of Petroleum & Natural Gas** is entrusted with the responsibility of exploration and production of oil and natural gas, their refining, distribution and marketing, import, export, and conservation of petroleum products and Liquefied Natural Gas.

### Key Highlights of the Policy:

- **Standard Procedure:** The objective of the policy is to prescribe a standard procedure to discover the market price of gas to be sold in the market by gas producers, through a transparent and competitive process permitting affiliates to participate in the bidding process for the sale of gas and allow marketing freedom to certain Field Development Plans (FDPs) where Production Sharing Contracts already provide pricing freedom.
- **Transparent Bidding Process:** The policy aims to provide a standard procedure for the sale of natural gas by issuing guidelines for sale by the contractor through e-bidding.
- This will bring uniformity in the bidding process across the various contractual regimes and policies to avoid ambiguity and contribute towards ease of doing business.
- The policy has also **permitted Affiliate companies** to participate in the bidding process for the sale of gas.
- **Freedom to FDPs:** The policy will also grant marketing freedom to the Field Development Plans (FDPs) of those Blocks in which Production Sharing Contracts already provide pricing freedom.
- This will facilitate and **promote more competition** in the marketing of gas.
- However, **rebidding** will have to be done in case only affiliates participate, and there are no other bidders.

### Significance:

#### Encouraging investments:

- These reforms will prove very significant for Atmanirbhar Bharat by **encouraging investments** in the domestic production of natural gas and reducing import dependence.
- The domestic production will further help in increasing investment in the downstream industries such as City Gas Distribution and related industries.

#### Contributes towards ease of doing business:

- This will bring **uniformity** in the **bidding process** across the various contractual regimes and policies to avoid ambiguity and contribute towards ease of doing business.

#### Improves Environment:

- The increased gas production-consumption will help in the improvement of the environment.

#### Creates employment opportunities:

- These reforms will also help in creating employment opportunities in the gas-consuming sectors including MSMEs.

## FRAMEWORK FOR REGULATORY SANDBOX

*IFSCA has introduced a framework for regulatory sandbox.*

### About:

- Under this new sandbox framework, entities operating in the capital market, banking, insurance, and financial services space shall be granted certain facilities and flexibilities to experiment with innovative financial technology (fintech) solutions in a live environment with a limited set of real customers for a limited timeframe.
- **Eligibility:** All entities (regulated as well as unregulated) operating in the capital market, banking, insurance, and pension sectors as well as individuals and startups from India and FATF compliant jurisdictions, shall be eligible for participation in the Regulatory Sandbox.
- These features shall be fortified with necessary safeguards for investor protection and risk mitigation.
- The regulatory sandbox will operate within the IFSC located at GIFT City.

### IFSCA:

- **International Financial Services Centre Authority (IFSCA)** is a Statutory Body established in 2020, with its headquarter in Gandhinagar (Gujarat).
- IFSCA works under the **Department of Economic Affairs, Ministry of Finance**.
- Its main function is to **develop and regulate** the financial products, financial services, and financial institutions located/performed in the International Financial Services Centres (IFSCs) in India.
- IFSCA is **empowered to exercise the powers** of **RBI, SEBI, IRDAI, and PFRDA** in respect of financial institutions, financial products, and financial services performed/located in the IFSCs in India.
- One of the objectives of IFSCA is to develop a **world-class FinTech hub** at the IFSC located at **GIFT City in Gandhinagar** (Gujarat, India).

### What is Regulatory Sandbox?

- It is a **safe harbor**, where businesses can test innovative products under **relaxed regulatory conditions**.
- Participating companies **release new products** in a **controlled environment** to a limited number of customers for a limited period.



# 2

# INTERNATIONAL RELATIONS

## INDIA-TAIWAN RELATIONS

*China has asked India to approach ties with Taiwan "prudently and properly" and said that it would "firmly oppose" any official exchanges between the two nations.*

### About:

- The statement from China came in response to reports that India and Taiwan were considering going forward with talks on a trade deal.
- China warned that any change in the One-China policy if pursued by India, will impair ties between Beijing and New Delhi.
- China is so sensitive about Taiwan because of its **geopolitical vulnerability**. It doesn't want other powers to dictate or change the rules of engagement on its seafloor.

### What is the One-China Policy?

- The **One-China policy** refers to the policy or view that there is only one state called "China", despite the existence of two governments that claim to be "China".
- As a policy, this means that countries seeking diplomatic relations with the People's Republic of China (PRC, Mainland China) must break official relations with the Republic of China (ROC, Taiwan) and vice versa.
- The **One China policy is different from the "One China principle"**, which is the principle that insists both Taiwan and mainland China are inalienable parts of a single China.

### What is the 'One China' Principle?

- The principle **affirms Chinese sovereignty over Taiwan** and is the cornerstone of bilateral diplomatic relations between Washington and Beijing.
- Any country that wants to establish political and diplomatic relations with China must agree to **adhere to this principle and not recognize Taiwan as an independent country**.
- Currently, 21 states recognize Taiwan as a sovereign country.
- In practice, the **'One China' principle** is a **stabilization mechanism** that preserves the status quo over Taiwan's political status while allowing it to function as an independent economic, civic, and administrative entity.
- Since 1979, Taiwan has had to negotiate its **'international living space'** but it has largely honored the 'One China' principle.

### India-Taiwan Relations:

- Both nations do not have any kind of formal diplomatic relations but both have been cooperating on various issues **and India has refused to endorse the "One-China" policy since 2010**.
- Taiwan's relations with India have increased in breadth spanning trade, research, and academia, as well as depth trade ties, amounted to \$7.5 billion in 2019, up from \$1 billion in 2000.
- India and Taiwan in 2018 signed a **bilateral investment agreement**. India-Taiwan trade ties have been expanded and Taiwanese firms are **prominent investors** in India.
- The Taiwanese government has a representative office namely the Taipei Economic and Cultural Center in India (TECC) which oversees the collaboration on different fronts.
- India has suggested the possibility of a free trade agreement with Taiwan.

### Challenges:

- India finds it difficult to realize the full potential of its bilateral relationship with Taiwan. At present, about 16 countries worldwide continue to recognize Taiwan as an independent state. India is not among the sixteen countries.
- **Trade & Investment:** The economic exchange is still relatively insignificant. Taiwan's share of trade with India is around 1% of its global trade.

### Way Forward:

- Taiwan has invested heavily in China studies. India should take advantage of this fact. Resource-rich India can benefit from Taiwan's technology.
  - ♦ For instance, India has abundant natural bamboo resources while Taiwan owns world-class bamboo charcoal technology. With this sort of technology, India can make use of its bamboo resources to produce high value-added goods.
- With the recent appointment of a senior diplomat to serve as the new envoy to Taiwan, India has signaled a shift in its One-China policy (although not officially abandoned) a clear indication of taking forward the diplomatic relationship with Taiwan.

## PAKISTAN STAYS ON FATF'S GREY LIST

*Pakistan is added in FATF's 'grey' list till February 2021.*

**About:**

- Pakistan will **remain on FATF's 'grey' list** till February 2021 as it has failed to fulfill six key obligations of the **Financial Action Task Force (FATF)**.
- To date, Pakistan has largely addressed 21 of the 27 action items.
- Pakistan has **failed to deliver on action against the charitable organizations or non-profit organizations** linked to the terror groups **banned by the UN Security Council**.
- And, delays in the prosecution of banned individuals and entities like Lashkar-e-Taiba (LeT) chief Hafiz Saeed and LeT operations chief, Zaki Ur Rahman Lakhvi, as well as Jaish-e-Mohammad chief Masood Azhar.

**FATF & Pakistan: A Brief Background**

- Pakistan has been on the **FATF grey list since June 2018** and was asked to implement the FATF Action Plan fully by Sept. 2019. It was in the same category from **2012 to 2015** too.

**Implications of being in Grey List:**

A country put in the grey list may face

- Economic sanctions from IMF, World Bank, ADB, etc which creates a problem in getting loans from the IMF, World Bank, ADB, and other countries.
- Reduction in international trade.
- International boycott.

**Financial Action Task Force (FATF):**

- It is an **inter-governmental decision-making body established in 1989 during the G7 Summit in Paris** to develop policies against money laundering.
- Its Secretariat is located in **Paris**.
- As of 2019, FATF consists of **37 member jurisdictions**. **India became an Observer at FATF in 2006**. On June 25, 2010, India was taken in as the 34th country member of FATF.
- It brings **national legislative and regulatory reforms in money laundering**. In 2001 its mandate was expanded to include terror financing.
- It **set standards and promotes effective implementation** of legal, regulatory, and operational measures for combating money laundering and terror financing.
- **It monitors countries** to ensure that they implement the FATF Standards fully.
- FATF's role in **combating terror financing became prominent after the 9/11 terror attacks in the US**.
- As of 2019, **FATF has blacklisted North Korea and Iran** over terror financing and the other 12 countries that are on the grey list are Bahamas, Botswana, Cambodia, Ethiopia, Ghana, Pakistan, Panama, Sri Lanka, Syria, Trinidad and Tobago, Tunisia, and Yemen.

**Lists of FATF:**

FATF has 2 types of lists:

- **Black List:** Countries known as **Non-Cooperative Countries or Territories (NCCTs)** are put on the blacklist. These countries support terror funding and money laundering activities. At present, there are only **two countries on the FATF's blacklist – North Korea and Iran**.
- **Grey List:** Countries that are considered a haven for supporting terror funding and money laundering are put in the FATF grey list. This inclusion serves as a **warning** to the country that it may enter the blacklist.

**INDIA-JAPAN FOREIGN MINISTERS' STRATEGIC DIALOGUE**

*India and Japan held the 13<sup>th</sup> India-Japan Foreign Ministers' Strategic Dialogue.*

**About:**

- MoU in the field of Cyber Security
- It emphasized a strong partnership between the two countries in **overcoming challenges posed by the Covid-19 pandemic**.
- Covid-19 and trade **tensions between China and the United States** are threatening supply chains. So, Japan has mooted the idea of **Supply Chain Resilience Initiative (SCRI)** as a trilateral approach to trade, with **India and Australia** as the key-partners.
- The importance of the Indo-pacific region was discussed.
- India launched the **Indo-Pacific Oceans Initiative (IPOI) at the East Asia Summit** in November 2019.

**Bilateral Relations:**

- India and Japan share **cultural relations primarily as a result of Buddhism**.
- After the restoration of Japan's sovereignty, Japan and India signed a **peace treaty**, establishing official diplomatic relations on 28 April 1952, in which India waived all reparation claims against Japan.
- In 2014, India and Japan upgraded their relationship to **'Special Strategic and Global Partnership**.
- The **India-Japan Comprehensive Economic Partnership Agreement (CEPA)** that came into force in August 2011 covers trade in goods, services, movement of natural persons, investments, Intellectual Property Rights, custom procedures, and other trade-related issues.

**Financial Relations:**

- Japan is the **third-largest source of FDI investment** in India after Mauritius and Singapore.

- Japan has invested in the \$90 billion **Delhi-Mumbai Industrial Corridor** (1,483 km high-speed rail and road line).
- **Mumbai-Ahmedabad High-Speed Railway (MAHSR)** is an important area of cooperation between India and Japan in the **Railway Sector** and Japan has already released the first tranche of 5,500 crore rupees.
- India's primary exports to Japan have been petroleum products, chemicals, elements, etc.
- India's primary imports from Japan are machinery, transport equipment, iron and steel, electronic goods, etc.

### Civil Nuclear Cooperation:

- Japan will supply nuclear reactors, fuel, and technology to India. **India is not a signatory to the non-Proliferation Treaty (NPT)** and is the **only non-signatory to receive an exemption from Japan**.

### Recent Developments:

- Recently, India and Japan signed a **logistics agreement** that will allow armed forces of both sides to coordinate closely in services and supplies. The agreement is known as the **Acquisition and Cross-Servicing Agreement (ACSA)**.
- An **"India-Japan Digital Partnership" (I-JDP)** was launched in 2018, focusing more on **"Digital ICT Technologies"**.
- In 2019, India and Japan held the **first-ever ministerial-level 2+2 dialogue** involving the Defense and Foreign Ministers on both sides.
- Both countries are also part of the **Quadrilateral Security Dialogue (QUAD)**.
- India and Japan defense forces organize a series of **bilateral exercises** namely, **JIMEX, SHINYU Maitri, and Dharma Guardian**. Both countries also participate in the **Malabar exercise with the USA**.

## AUSTRALIA TO JOIN THE MALABAR EXERCISE

*The Ministry of Defense announced that Australia would join the Malabar 2020 naval exercise.*

### About:

- This announcement came after more than three years since Australia first requested to join.
- This announcement comes amid the ongoing stand-off with China in eastern Ladakh since July.
- India stated that it seeks to **increase cooperation with other countries in the maritime security domain**.
- India also stated that the **participants of Exercise Malabar 2020 were engaging to enhance safety and security in the maritime domain** and they collectively support free, open,

and inclusive Indo-Pacific and remain committed to a rules-based international order.

### Australia and Exercise Malabar:

- Australia joined the exercise once in 2007 and this inclusion drew a sharp response from Beijing. In 2017, Australia requested observer status in the exercise.
- Since April 2017, Australia has been making repeated requests to join the exercises. But, India did not include Australia in the exercises in 2018 and 2019.
- Earlier, India had concerns that it would give the appearance of a **"quadrilateral military alliance"** aimed at China.
- Japan and the U.S. have also been advocating for Australia's inclusion for quite some time now and have been pushing India to consider it.

### Exercise Malabar

- It is a **trilateral naval exercise** involving the **United States, Japan, and India** as permanent partners.
- **It began as a bilateral naval exercise between India and the USA in 1992** and was expanded into a trilateral format with the inclusion of Japan in 2015. Past non-permanent participants are Australia and Singapore.

### QUAD Grouping

- It is an informal strategic forum between the **United States, Japan, Australia, and India**. The idea of grouping was first conceptualized by the **Japanese Prime Minister Shinzo Abe in 2007**.
- It has a shared objective of ensuring a free, open, and prosperous **Indo-Pacific region**.

### Concerns of China:

- China sees this maritime Quadrilateral as an **Asian-NATO** that seeks only to contain China's rise.
- China has noted that at a time of strained bilateral ties, India's intention to involve Australia in the Malabar drill could only be construed as a move directed against Beijing.
- In the recent past, China has stepped up its naval presence in the South China Sea.

### Few Important Exercise between India and Australia:

- **Exercise Pitch Black** is a biennial three-week multilateral air combat training exercise hosted by the Royal Australian Air Force (RAAF).
- **AUSINDEX** is a **bilateral naval exercise** between the Indian Navy and the Australian Navy. It was first held in 2015.
- Both countries hold bilateral **army exercises** named **AUSTRAHIND**.

## INDIA-DENMARK GREEN STRATEGIC PARTNERSHIP

*The Prime Ministers of India and Denmark agreed to elevate India-Denmark relations to a Green Strategic Partnership.*

### About:

- **India** and **Denmark** will cooperate through relevant ministries, institutions, and stakeholders.
- India has launched **Green Strategic Partnership for the first time with Denmark** as its partner to be at forefront of the global fight against Climate Change.

### What is the Green Strategic Partnership?

- It is a mutually beneficial arrangement to advance **political cooperation**, **expand economic relations** and **green growth**, **create jobs**, and **strengthen cooperation** on addressing **global challenges** and opportunities with a focus on the implementation of the **Paris Agreement** and the **UN Sustainable Development Goals**.

### Key Highlights:

- **Energy and Climate Change:** The two partners agreed on addressing global challenges and solutions on green energy transition and climate change.
- **Environment/Water and Circular Economy:** Both the countries agreed to work towards further strengthening the existing **Government-to-Government cooperation** on **environment/water and circular economy**.
- **Sustainable Urban Development including Smart Cities:**
  - ♦ Both sides agreed to strengthen bilateral cooperation in **sustainable urban development, including in smart cities** through the **Urban Living Lab in Goa**.
  - ♦ Both sides also agreed to strengthen existing **City-to-City** cooperation between **Udaipur and Aarhus and Tumakuru and Aalborg**.

### Significance:

- It will prove useful for **India-Denmark relations** and will also help in building a common **approach towards global challenges**.
- This will help expand **economic relations** and **green growth**.
- The summit proved that India and Denmark had overcome one of the biggest hurdles to their bilateral relationship, the **future of Kim Davy, accused in the Purulia arms drop case**. That one issue had almost **blacklisted Denmark** for the Indian government for decades.

## NEW START TREATY

*The Russian President has proposed a one-year extension for nuclear arms reduction accord between Russia and the U.S.*

### About:

- The treaty is **bound to lapse in February 2021** unless extended for five years.

### New START Treaty:

- It stands for the **New Strategic Arms Reduction Treaty** and is a treaty between the United States of America and the Russian Federation on Measures for the further reduction and limitation of strategic offensive arms.
  - ♦ It is a successor to the **START framework of 1991** (at the end of the Cold War) that limited both sides to 1,600 strategic delivery vehicles and 6,000 warheads.
  - ♦ It was **signed in April 2010** but went into force in February 2011.
- It limits the number of deployed nuclear warheads, missiles, and bombers and is due to expire in 2021 unless renewed. It mentions that the US and Russia can have a maximum of 1,550 deployed nuclear warheads and 700 deployed missiles and bombers, well below Cold War caps.

## CHABAHAR PORT

*The Union Shipping Ministry has extended the current 40% discount for movement of cargo between India and Chabahar port in Iran.*

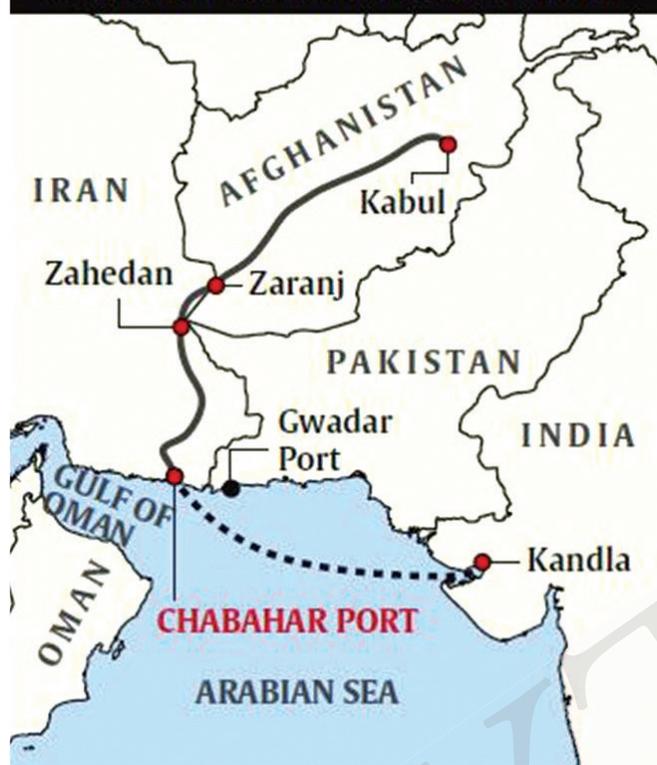
### About:

- The extension was given for one year.
- The extension of the discount period aims to promote trade through Shahid Beheshti Port of Chabahar, Iran. It would give a boost to the coastal movement of cargo being handled at Jawaharlal Nehru Port and Deendayal Port from/to Shahid Beheshti Port.
- The discount will be given for one year.

### Chabahar Port:

- It is located on the **Gulf of Oman**. It will be developed by India.
- In 2016, India, Iran, and Afghanistan signed the trilateral agreement which envisaged the establishment of a **Transit and Transport Corridor** connecting the three countries and Chabahar port in Iran to be used as a cardinal hub of transportation.

## BEING DIRECT: INDIA TO CHABAHAR



- The agreement had the provision for the construction of a **rail line from Chabahar port to Zahedan**, along the border with Afghanistan which would serve as an alternate trade route to Afghanistan and Central Asia bypassing Pakistan.
- The port serves as the **only oceanic port of Iran** and consists of two separate ports named **Shahid Beheshti** and **Shahid Kalantari**.

### Importance of Chabahar for India:

- It will boost trade ties, diplomatic ties, and military ties with Iran.
- It will provide India with better connectivity to Afghanistan bypassing Pakistan.
- It would give India access to Central Asia and Europe via **7,200-km-long multi-modal North-South Transport Corridor (INSTC)** which is a combination of road, rail, and sea routes.
- This port is just 170 km away from Gwadar port operated by China in Pakistan, hence this port is of **significant strategic importance to the Indian Navy and defense establishment** to counter the presence of China in the Indian Ocean region.

### Recent Rift in the Chabahar Rail Project:

- In July the Iranian government decided to proceed with the construction on its own, citing delays from the Indian side in funding and starting the project.

- The decision by Iran came after it finalized a massive 25-year, \$400 billion strategic partnership deal with China. This move of Iran can cloud India's plan.

### Background:

Reasons behind the dropping of India:

- Despite various visits, **India never began the work**, due to worries that these **could attract U.S. sanctions**.
- It has been **difficult to find equipment suppliers and partners** due to worries of getting targeted by the U.S.
- India has already "zeroed out" its oil imports from Iran due to U.S. sanctions.
- Iran and China are close to finalizing a 25-year Strategic Partnership which will include Chinese involvement in Chabahar's duty-free zone, an oil refinery nearby, and possibly a larger role in Chabahar port as well. This may be a probable reason for India's dropping.
- There is a rumor that the Chabahar port will be leased to China surpassing India.

### Concerns for India:

- **The closeness of Iran and China** further worries India due to the vast expansion of the Chinese presence in various sectors of Iran.
- **The Iran-China deal** is against India's "strategic ties" with Iran and the use of Chabahar port.
- The **Bandar-e-Jask port** lies to the west of Chabahar & right before the Straits of Hormuz and China would like to extend its control along the Pakistan-Iran coast.

## NEW CALEDONIA REFERENDUM

*People in the French overseas territory of New Caledonia have narrowly rejected independence from France in a referendum.*

### About:

- The referendum was part of a series of votes agreed two decades ago, following bouts of violence in the 1980s over the issue of independence between the **islands' indigenous Kanak people and descendants of Europeans**.
- Kanaks represent around 40% of the population, while Europeans, mostly born in the territory, makeup about a third. Others come from other Pacific islands or are of mixed heritage.
- **The Noumea Accord** concluded in 1998, **provided for sovereign status**. Under this agreement, New Caledonia is allowed up to three referendums on independence up to 2022 if requested by a third of the local assembly. This latest referendum was second.



- The International Labour Organization (ILO), based in **Geneva**, became the **first specialized agency of the UN in 1946**.
- It has 187 member states: 186 of the 193 UN member states plus the **Cook Islands** are members of the ILO.
- As the **only tripartite U.N. agency**, ILO brings together governments, employers, and workers of Member States, to set labor standards, develop policies and devise programs promoting decent work for all women and men.
- The ILO is **the global body responsible for drawing up and overseeing international labor standards** and for ensuring that these standards are respected in practice and principle.

### New Caledonia:

- It is an archipelago, located in the southwest Pacific Ocean.
- In 1946, New Caledonia became an overseas territory and by 1953, French citizenship was granted to all New Caledonians, regardless of their ethnicity.
- It is one of **the UN's 17 "non-self-governing territories"** -where the process of decolonization has not been completed.
- It enjoys a large degree of autonomy but depends heavily on France for matters like defense and education and still receives large **subsidies from Paris**.
- It has **large deposits of nickel with around (10 percent)**, a vital component in manufacturing electronics, and is seen by France as a strategic political and economic asset in the region.

## INDIA ASSUMES THE CHAIRMANSHIP OF ILO GOVERNING BODY

*India assumed the role of chair of the International Labour Organisation's governing body from 2020-2021.*

### About:

- Shri Apurva Chandra, Secretary (Labour and Employment) has been elected as the Chairperson of the Governing Body of the International labor organization (ILO) for the period 2020- 2021.

### International Labour Organisation:

- ILO was created in 1919, as part of the **Treaty of Versailles** that ended World War I, to reflect the belief that universal and lasting peace can be accomplished only if it's based on social justice.

### Key Roles:

- The organization has played a role at key historical junctures – the Great Depression, decolonization, the creation of Solidarność in Poland, the victory over apartheid in South Africa – and today in the building of an ethical and productive framework for fair globalization.

### India and ILO:

- India is a **founder member of ILO**.
- India **has ratified six out of the eight-core/fundamental International Labour Organisation (ILO) Conventions**. These are:
  - ♦ Forced Labor Convention
  - ♦ Abolition of Forced Labor Convention,
  - ♦ Equal Remuneration Convention,
  - ♦ Discrimination (Employment and Occupation) Convention, 1958,
  - ♦ Minimum Age Convention, and
  - ♦ Worst Forms of Child Labor Convention, 1999
- India has not ratified the core/fundamental Conventions, namely
  - ♦ Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87) and
  - ♦ Right to Organise and Collective Bargaining Convention, 1949 (No. 98).
- The main reason for the non-ratification of ILO Conventions is due to certain privileges given by them to Government servants, namely, to strike, to openly criticize Government policies, to freely accept a financial contribution, to freely join foreign organizations, etc.

# 3

# INTERNAL SECURITY

## BRAHMOS MISSILE

*A naval version of the BrahMos supersonic cruise missile was successfully test-fired.*

### About:

- The missile was fired from INS Chennai, a stealth destroyer which hit the target with pinpoint accuracy after performing "extremely complex" manoeuvres.

### BrahMos Supersonic Cruise Missile:

- BRAHMOS is a **joint venture** between the **Defence Research and Development Organisation of India (DRDO)** and the similar organization of Russia.
- Brahmos is named on the rivers **Brahmaputra and Moskva**.
- It is a supersonic missile travelling at a speed of Mach 2.8.
- It is the world's fastest supersonic cruise missile.
- It can be **launched from land, air, and sea** and has the multi capability with pinpoint accuracy that works in **both day and night irrespective** of the weather conditions.
- It is, therefore, used by all three forces, the Army, Navy and the Air Force.
- It operates on the **"Fire and Forget" principle** i.e it does not require further guidance after launch.
- However, India's entry into the **Missile Technology Control Regime (MTCR)** has extended the range of the BRAHMOS missile to reach 450 km-600km, a shade above its current MTCR capped range of 300 km.

### Significance:

- These **air-to-ground BrahMos missiles** can conceivably be used for **pinpoint strikes on terror camps located deep inside enemy territory**, or to take out underground nuclear bunkers, command-and-control centres and other high-value military targets like aircraft carriers on the high seas, from long stand-off distances.
- India has already deployed a number of the original BrahMos missiles and other key assets in several strategic locations along the de-facto border with China in Ladakh and Arunachal Pradesh.
- The successful launch has paved the way for the serial production of the **indigenous booster and other indigenous components** of the powerful BrahMos Weapon System realizing **Atmanirbhar Bharat pledge**.

## FREEDOM OF NAVIGATION OPERATIONS (FONOP)

*The Indian and US Navy has conducted Passage Exercise (PASSEX) to undertake Freedom of Navigation Operations (FONOP).*

### About:

- It is a **naval exercise which Indian Navy** conducts with navies of friendly nations whilst visiting each other's ports or during a rendezvous at sea.
- It aims at **enhancing operability, coordination**, understanding and learning from each other's best operational practices.
- It generally includes advanced surface and anti-air exercises including weapon firing, seamanship exercise, naval manoeuvres and Cross Deck Flying Operations.
- India had conducted PASSEX with India, Russia and Japan.

### Freedom of Navigation Operations:

- FONOPs are linked with the **concept of freedom of navigation** and the enforcement of relevant international law and customs regarding freedom of navigation.
- Freedom of navigation has been codified and accepted as **international law under the United Nations Convention on the Law of the Sea (UNCLOS)**.
- The drafting of UNCLOS was driven in part by states' concerns that strong national maritime interests could lead to excessive maritime claims over coastal seas, which could threaten freedom of navigation.
- FONOPs are based on a balance between sovereign equality and international interdependence.

### Significance:

- FONOPs are a method of enforcing UNCLOS and avoiding negative outcomes by reinforcing freedom of navigation through practice.
- It is exercised by sailing through all areas of the sea permitted under UNCLOS, and particularly those areas that states have attempted to close off to free navigation as defined under UNCLOS.

### United Convention on Law of Seas:

- The Law of the Sea Treaty formally known as the Third United Nations Convention on the Law of the Sea was adopted in 1982 at Montego Bay, Jamaica. It entered into force in 1994.

- The convention establishes a comprehensive set of rules governing the oceans and to replace previous U.N. Conventions on the Law of the Sea.
- The convention defines the distance of 12 nautical miles from the baseline as **Territorial Sea limit** and a distance of 200 nautical miles distance as **Exclusive Economic Zone limit**.

## NATIONAL INVESTIGATION AGENCY (NIA)

*Union Home Ministry sanctioned three new branches of the National Investigation Agency (NIA).*

### About:

- National Investigation Agency (NIA) will have three more branches in **Imphal, Chennai and Ranchi** to **ensure a quick response** to any emergent situation in the concerned states.
- The government has empowered the National Investigation Agency (NIA) to investigate offences **under the Narcotic Drugs and Psychotropic Substances (NDPS) Act** so that the agency need not rely on local police to unravel drug trade ties that emerge during counter-terrorism operations.

### National Investigation Agency (NIA):

- It was established under the **National Investigation Agency Act 2008** headquartered in **New Delhi**.
- The overall guidance is provided by the **Ministry of Home Affairs**.
- It is a **central agency to investigate and prosecute offences** which affect the **sovereignty, security and integrity of India**.
- It acts as the Central **Counter-Terrorism Law Enforcement Agency**. It is empowered to deal with terror-related crimes across states **without special permission from the states**.
- **A State Government may request** the Central Government to **hand over the investigation** of a case to the NIA.
- **The Central Government can also order** NIA to take over the investigation of any scheduled **offence anywhere in India**.
- The offences under the **Atomic Energy Act, 1962**, and the **Unlawful Activities Prevention Act, 1967** are to be investigated and prosecuted by the NIA. Currently, the NIA has nine branches besides specialized units.

### Recent Amendment:

- The **NIA (Amendment) Bill, 2019** was passed by Parliament amending the original Act of 2008.
- The Bill **seeks to allow the NIA to investigate** the following additional offences:
  - ♦ Human trafficking
  - ♦ Offences related to counterfeit currency or banknotes
  - ♦ Manufacture or sale of prohibited arms

- ♦ Cyber-terrorism, and
- ♦ Offences under the Explosive Substances Act, 1908

### Special NIA Courts:

- Various Special Courts have been notified by the Central Government of India for the trial of the cases registered at various police stations of **NIA under Section 11 and 22 of the NIA Act 2008**.
- Any question as to the jurisdiction of these courts is decided by the Central Government.
- These are **presided over by a judge** appointed by the **Central Government** on the recommendation of the **Chief Justice of the High Court** with jurisdiction in that region.
- **Supreme Court** of India has also been **empowered** to transfer the cases from one special court to any other special court within or outside the state if the same is in the interest of justice in light of the prevailing circumstances in any particular state.
- The NIA Special Courts are empowered with **all powers of the court of sessions** under the Code of Criminal Procedure, 1973 for a trial of any offence.
- **An appeal from** any judgement, sentence or order, not being an interlocutory order, of a Special Court lies to **the High Court** both on facts and on the law. State Governments have also been empowered to appoint one or more such special courts in their states.

## SLINEX-20

*The 8<sup>th</sup> Edition of annual bilateral maritime exercise SLINEX-20 has been conducted in Triconomae.*

### About:

- The exercise is being conducted between navies of India and Sri Lanka in a **non-contact 'at-sea-only' format** in the **backdrop** of **COVID-19 pandemic**.

### About SLINEX:

- It is an **annual bilateral maritime** exercise between the **Sri Lanka Navy (SLN)** and **Indian Navy**.
- It is a series of exercises emphasising the **deep engagement** between **India** and **Sri Lanka**.
- It aims to enhance **interoperability**, **improve mutual understanding** and **exchange best practices** and **procedures** for **multi-faceted maritime** operations between **both navies**.
- The previous edition of **SLINEX** was conducted off **Visakhapatnam** in **September 2019**.

**Key Points:**

- Interaction between the **SLN and IN** has also grown significantly in recent years, in consonance with **India's policy of 'Neighbourhood First'** and **Hon'ble PM's vision of 'Security and Growth for all in the Region (SAGAR)'**.
- **Synergy** developed during **SLINEX** exercises resulted in **seamless coordination** of joint **SLN – IN efforts** in **September 2020** to help **MT New Diamond** which is a **Very Large Crude Carrier (VLCC)** as it had **caught fire** off the **East Coast of Sri Lanka**.

**Significance:**

- It has strengthened **cooperation** in the **maritime domain**.

**"FIVE EYES" GROUP OF NATIONS**

*India joins 'Five Eyes' group of nations.*

**About:**

- It marks an expansion of **"Five Eyes" group of nations** where **India becomes 7<sup>th</sup> member**.
- The seven signatories have made it clear that when **end-to-end encryption** is applied with no access to content, it severely **undermines** the ability of companies to take action **against illegal activity** on their platforms.
- It also prevents law enforcement agencies in investigating and prosecuting the most serious crimes on these services such as **online child sexual abuse, grooming** and **terrorist content**.

**About the Five Eyes' Group of Nations**

- It is an intelligence alliance comprising **Australia, Canada, New Zealand, the United Kingdom and the United States**.
- These countries are parties to the **multilateral UK-USA Agreement**, a treaty for cooperation in signals intelligence.
- The origins of the Five Eyes alliance can be traced back to the **Atlantic Charter**, which was issued in August 1941 to lay out the Allied goals for the post-war world.
- India is among seven countries to back a UK-led campaign against end-to-end encryption of messages by social media giants such as Facebook, which they say hinder law enforcement by blocking all access to them.

**Functions:**

- The Council members **exchange views, compare best practices**, and explore new ideas on subjects of mutual interest and concern.
- Explore areas where cooperation on reviews and the sharing of results is permitted where appropriate.

- Encourage transparency to the largest extent possible to enhance public trust.

**End-to-End Encryption:**

- It is a system of **communication** where only communicating users can read the messages.
- It is regarded as the most secure way to communicate **privately** and **securely online**.
- By encrypting messages at both ends of a conversation, end-to-end encryption prevents anyone in the middle from reading private communications.

**RUDRAM: ANTI-RADIATION MISSILE**

*India's first indigenous anti-radiation missile named Rudram was successfully flight-tested.*

**What is an Anti-Radiation Missile?**

- **Anti-radiation missiles** are designed to **detect, track** and **neutralise** the adversary's **radar, communication assets** and **other radio frequency sources**, which are generally part of their **air defence systems**.

**About Rudram:**

- Rudram is an **air-to-surface missile**, designed and developed by the **Defence Research and Development Organisation (DRDO)** for **neutralizing surveillance** and **guidance radars, communication towers, command** and **control centres**, and other **radiation-emitting targets**.

**Features:**

- The missile is powered by **two-pulse solid rocket motors** for enhanced range.
- It can be launched from **different altitudes**, ranging from **500-meters to 15-km**.
- It has both '**lock-on before launch (LOBL)**' and '**lock-on after launch (LOAL)**' modes.
- It has **INS-GPS navigation** with a **passive homing head** for the final attack which can detect, classify and engage targets over a wide band of frequencies as programmed.
- It has a strike range from **100 to 200-km** depending on the altitude from which it is fired.

**Significance:**

- Rudram has been developed for the Indian Air Force - IAF's requirement to enhance its **Suppression of Enemy Air Defence (SEAD)** capability.
- For modern-day network-centric warfare, any weapon system must be integrated with elaborate detection, surveillance and communication systems.

## HYPERSONIC MISSILE SHAURYA

*India successfully test-fired indigenously developed nuclear-capable hypersonic missile 'Shaurya'.*

### About:

- The **surface-to-surface** tactical missile was blasted off from the **Integrated Test Range (ITR)** in the **APJ Abdul Kalam Island**.
- It is a **land** variant of **Submarine Launched Ballistic Missile (SLBM) K-15**, which completed its developmental trials in **2011**.
- The **10-metre-long weapon system** having a width of about half-a-metre uses **solid propellant** which gives it a longer **service-life** and **shorter launch** time.
- It has a strike range of **700 km to 1000 km** and is capable of carrying **payloads of 200 kg to 1000 kg**.
- It is less vulnerable to **anti-ballistic missile** defence systems due to its **high manoeuvrability**.

### DRDO Officials Rating:

- They rated **Shaurya** as one of the top 10 missiles in the world in its class with its **high-performance navigation** and **guidance systems**, **efficient propulsion systems**, **sophisticated control technologies** and **canisters launch**.

### Key Features:

- Shaurya can be stored in a **composite canister**, which makes it easy to handle and transport.
- The missile is **so agile** that radars across the borders will have less than **400 seconds** to **detect, track** and **intercept** before it hits the target.
- It is powered by **solid fuel** like a **ballistic missile** and it can guide itself up to **the target** like a **cruise missile**.
- Its **two-stage rocket accelerates** the missile to **six times the speed of sound** before it reaches an altitude of 40 km, after which it cruises towards the target.
- It cannot be detected by **satellite imaging**, which makes the system war-ready and lethal.
- The missile can be fired from **both land and underwater submarines**.

- The missile would be **lighter and easier** to operate in comparison with the existing missile.
- In the last phase while moving close to its target, the missile moves at **hypersonic** speeds.

### Significance:

- The test assumes significance as it is one of the **China-specific missiles** developed by the country.

## SMART SYSTEM

*India conducted the flight test of a Supersonic Missile Assisted Release of Torpedo (SMART) system.*

### About:

- SMART is a missile-assisted release of lightweight anti-submarine torpedo system for anti-submarine warfare (ASW) operations far beyond torpedo range.
- SMART is a hybrid missile that incorporates technologies of two different weapon systems making it faster and stealthier.
- With this, India has got an anti-submarine weapon having a much higher range.
- While the long-range torpedo available in the world is around 50 km and rocket-assisted torpedoes can strike at a range of 150 km, the SMART will have a range of over 600 km.

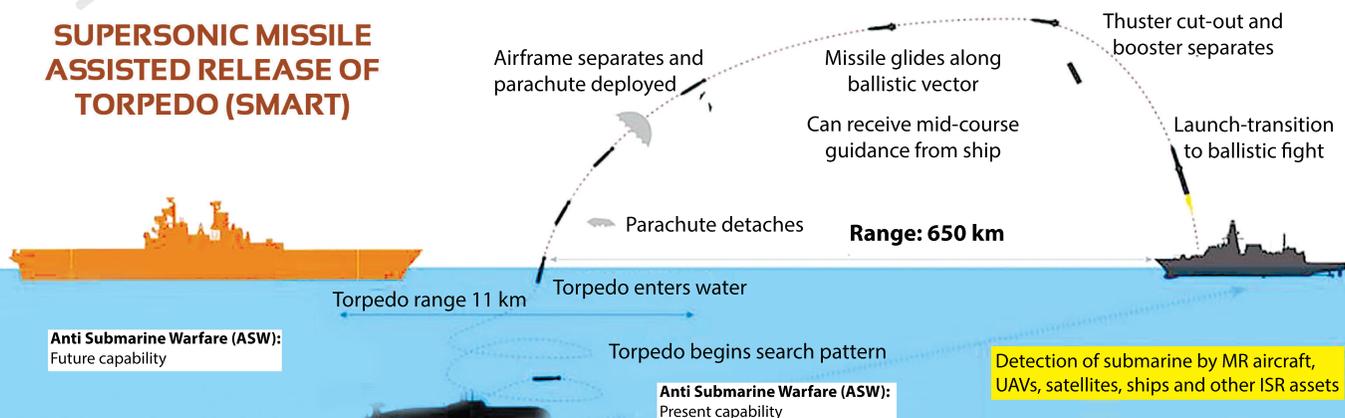
### What is Torpedo?

- Torpedoes are self-propelled weapons that travel underwater to hit a target but they are limited by their range.

### Significance:

- The development of the system has been crucial in the capacity building of naval platforms to strike beyond the torpedo range.
- The system will be a significant addition to India's anti-submarine warfare capabilities and the test is a key step towards its deployment.
- This launch and demonstration is significant in establishing anti-submarine warfare capabilities.

## SUPERSONIC MISSILE ASSISTED RELEASE OF TORPEDO (SMART)



# 4

# POLITY & GOVERNANCE

## SVAMITVA SCHEME

*The Prime Minister has launched the physical distribution of Property Cards under the SVAMITVA Scheme.*

### About:

- The launch will enable **around one lakh property** holders to download their **Property Cards** through the **SMS link** delivered on their **mobile phones**.
- State Governments will distribute physical Property Cards.
- Beneficiaries will be selected from **763 villages** across **six states** including Uttar Pradesh, Haryana, Maharashtra, Madhya Pradesh, Uttarakhand, and Karnataka.
- Beneficiaries from all these states **except Maharashtra** will receive the **physical copies** of the **Property Cards** within one day.

### SVAMITVA:

- SVAMITVA stands for **the Survey of villages and mapping with improvised technology in village areas**.

**SVAMITVA Schemes: Transforming Rural India, Empowering Millions**

The Road Ahead

- 6.2 lakh villages to be covered in four years (Apr'20 – Mar'24)
- Create accurate land, reduce property related disputes and increase liquidity of land parcels
- Will streamline planning and revenue collection and ensure clarity on property rights in rural areas
- To establish nearly 300 Continuously operating reference station (CORS) across the country.
- Land parcels in rural inhabited areas are mapped using drone technology and CORS
- The scheme will enable creation of better-quality Gram Panchayat Development Plans (GPDPs)

- It is a **Central Sector scheme** launched by the Prime Minister of India on **National Panchayat Day (24<sup>th</sup> April 2020)**.

- **Aims:** To provide an integrated property validation solution for rural India.
  - ♦ To provide the 'record of rights' to village household owners in rural areas and issue Property Cards.
  - ♦ The demarcation of rural areas would be done using Drone Surveying technology.
- The scheme will be launched in a phased manner over **four years. (2020-2024)**
- **Implementing Agencies:** Ministry of Panchayati Raj at National Level
  - ♦ Revenue Department/Land Records Department in States
  - ♦ Survey of India is a technology partner for the implementation.
- **Benefits:**
  - ♦ It will bring **financial stability** to the citizens in rural India by enabling them to use their **property as a financial asset** for taking loans and other financial benefits.
  - ♦ It will help in the **creation of accurate land records** for rural planning.
  - ♦ It will help in the **determination of property tax**.
  - ♦ It will **reduce property related disputes** and legal cases.
  - ♦ It will support the preparation of a better-quality Gram Panchayat Development Plan by making use of GIS maps.
  - ♦ The Gram Panchayats are constitutionally mandated for the preparation of Gram Panchayat Development Plans (GPDP) for economic development and social justice.
  - ♦ The GPDP is based on a participatory process in convergence with schemes of all related Central Ministries/ Line Departments related to 29 subjects listed in the Eleventh Schedule of the Constitution.

## RIGHT TO PROTEST

*The Supreme Court found unacceptable, the indefinite "occupation" of a public road by the Shaheen Bagh protestors.*

### About:

- The judgment upheld the **right to peaceful protest against the law** but made it clear that public ways and public spaces cannot be occupied, and that too indefinitely.
- The ruling came after a petition was filed in the **SC highlighting problems caused by the protests** which led to the roadblock and traffic problems.



**Key Highlights of Ruling:**

- **Role of Administration:** Such kind of occupation of public ways, whether at the site in question or anywhere else for protests, is not acceptable and the administration ought to take action to keep the areas clear of encroachments or obstructions.
- **On Judiciary:** Courts cannot accept the plea of the applicants (who sought to intervene in the matter in defense of the protesters) that an indeterminable number of people can assemble whenever they choose to protest.
- **Use of technology:** Technology works to both empower digitally-fueled movements and, at the same time, contribute to their apparent weaknesses.
  - ♦ Social media channels are often fraught with danger and can lead to the creation of highly polarized environments, which often see parallel conversations running with no constructive outcome evident.
- **Reference made by SC:** The Supreme Court has referred to its 2018 judgment in the **Mazdoor Kisan Shakti Sangathan vs Union of India and Another case**, which dealt with demonstrations at Delhi's Jantar Mantar.
  - ♦ The judgment tried to balance the interests of residents with those of protesters to hold demonstrations and directed the police to devise a **proper mechanism for limited use of the area for peaceful protests** and demonstrations and to lay down parameters for this.

**What is the Right to Protest?**

- The right to protest peacefully without arms is a **fundamental political right** of the people that comes directly from Article 19 of the Indian Constitution.
- However, resorting to violence during the protest is a violation of a key fundamental duty of citizens. Enumerated in Article 51A, the Constitution makes it a fundamental duty of every citizen "to safeguard public property and to abjure violence".
- **Democracy and dissent go hand in hand**, but then the demonstrations expressing dissent have to be in **designated places alone**.
- The seeds of protest and dissent were sown deep during the Freedom struggle but dissent against the colonial rule cannot be equated with dissent in a self-ruled democracy.

**Reasonable Restrictions:**

- **Article 19(2)** imposes reasonable restrictions on the right to **assemble peaceably** and without arms.
- These reasonable restrictions are imposed in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality, or about contempt of court, defamation, or incitement to an offense.

**"CRIME IN INDIA" 2019 REPORT**

*NCRB's "Crime in India" 2019 Report was released*

**About:**

- **Crimes against women**
  - ♦ Increased 7.3 percent from 2018 to 2019.
  - ♦ The majority of cases under crime against women were registered under 'cruelty by husband or his relatives'.
  - ♦ The highest number of crimes against women were reported in Uttar Pradesh (UP), followed by Rajasthan and Maharashtra.
  - ♦ The highest rate of crime (cases per lakh population) against women were reported in Assam, followed by Rajasthan and Haryana.
- **Caste-based violence**
  - ♦ Crimes against Scheduled Castes (SC) went up 7.3% from 2018 to 2019.
  - ♦ UP reported most cases against SCs (accounting for 25.8% of the cases across the country) was followed by Rajasthan and Bihar.
  - ♦ The highest rate of crimes against SCs was reported in Rajasthan followed by MP and Bihar.
- **Crimes against children** increased by 4.5% from 2018 to 2019.
- **Offenses against the state**
  - ♦ Decreased by 11.3% from 2018 to 2019.
  - ♦ Of these, 80.3% were registered under the Prevention of Damage to Public Property Act, followed by the Unlawful Activities (Prevention) Act.
- **Cybercrimes**
  - ♦ Registered a 63.5% jump from 2018 to 2019.
  - ♦ 60.4% of cybercrime cases registered were for the motive of fraud, followed by sexual exploitation.
- **Crime against Scheduled Tribes** saw an increase of 26% from 2018 to 2019.

**CHAPTER PROCEEDINGS**

*Chapter proceedings have been initiated against Republic Editor-in-Chief Arnab Goswami.*

**About:**

- The notice refers to **objectionable coverage** of two incidents i.e., the **lynching of sadhus** in **Palghar district**, and the issue of **Bandra migrants** gathering during the lockdown.
- It states that Goswami and his channel gave **communal color** to the **incidents** and tried to **incite communal tension** between **Hindu and Muslims**.

### What is Chapter Proceeding?

- It is a provision in the **Code of Criminal Procedure (CrPC)** under which police can **obtain a bond** from a **citizen**, **seeking good behavior** for a period extending up to **three years**.
- It is a **preventive action** taken by the **police** if they **fear** that a particular person is likely to **create trouble** and **disrupt the peace** in society.

### Related Sections of Code of Criminal Procedure:

- Generally, a notice is issued to a person under **section 111 of the CrPC** whereby he is asked to present himself before the **Executive Magistrate** which is an **ACP-rank officer** in rural areas.
- There is no need for even an FIR against a person for issuing a notice **under section 107** of the CrPC (security of keeping peace in other cases). In this case, the bond is signed for one year.
- **Under section 110**, a notice is served to a **habitual offender** who has a record of FIRs registered against him.

### Legal Options to Appeal against the Notice:

- On receiving the notice under **section 111**, a person can appeal the notice before the courts.
- In fact, in the past, courts have come down strongly against chapter proceedings in some cases.

## ORIGINALISM

*The US Supreme Court nominee Amy Coney Barrett had recently described "originalism" as her legal philosophy.*

### About:

- Originalism means interpreting the **country's Constitution** as per the intentions of the **USA's 18<sup>th</sup>-century founding leaders**.
- **Background:** Amy Coney Barrett replaced the late Justice Ruth Bader Ginsburg who died recently.
- The US Supreme Court nominee Amy Coney Barrett self-described her as an originalist who considered a strong champion of **constitutional originalism** and **judicial conservatism**.

### What is the Meaning of 'Originalism'?

- **Originalism** is a term **coined in the 1980s** to describe a **judicial philosophy** focusing on the text of the Constitution and the **founding fathers' intentions** in resolving **legal disputes**.
- Originalists believe that judges are bound by the constitutional text, which can be applied to contemporary circumstances.
- It has been popular among **US conservatives**, who have sought to **promote judicial restraint** on the **country's federal courts**.

- Adherents of **originalism** believe that **social change** should be brought about by new **laws made by elected representatives**, and not through **judicial activism**, in which judges make **new interpretations** of the constitution.

### Criticism of Originalism:

- The critics have denounced it as another name for **right-wing political agenda**, and have **accused originalists of trying to chip away** at **hard-earned social reforms** by applying outdated beliefs of the **18<sup>th</sup> and 19<sup>th</sup> centuries** to **modern-day legal disputes**.
- Critics say originalism is **shortsighted and even problematic** because it fails to recognize the shortcomings of the original document. Originalism is a theory focused on the process, not on substance.

### About 'Living Constitution' Theory:

- The legal philosophy opposite of originalism is **'living constitution'** or **'modernism'**.
- In this theory, the constitution **should be updated** with times to **encompass changing societal needs**.
- The Originalists consider this theory as **judicial overreach**, and **criticize living constitution** jurists as **"activist judges"**.
- This judicial philosophy considers the Constitution to be a living document, able to encompass **society's evolving values**.

## ELECTORAL BONDS

*The government of India approved the 14<sup>th</sup> tranche of electoral bonds which will be open for sale.*

### About:

- The sale of electoral bonds will be carried out from **selected branches of the State Bank of India (SBI)**.

### Electoral Bonds:

- The electoral bonds were introduced with the **Finance Bill (2017)** and the government notified the **Electoral Bond Scheme 2018** to boost transparency in political funding.
- It is a **financial instrument for making donations** to political parties.
- It is like a promissory note that can be bought by any Indian citizen or company incorporated in India and the citizen or corporate can then donate the same to any eligible political party of his/her choice.
- These bonds are issued in **multiples** of Rs. 1,000, Rs. 10,000, Rs. 1 lakh, Rs. 10 lakhs, and Rs. 1 crore without any maximum limit.

### How the Bonds are Sold?

- The bonds are available for **purchase for 10 days at the beginning of every quarter**. The first 10 days of January, April, July, and October have been specified by the government for the purchase of electoral bonds. An additional period of 30 days shall be specified by the government in the year of the Lok Sabha elections.
- These bonds are issued by the **authorized branches of the State Bank of India (SBI)** and are valid for 15 days from the date of the purchase.

### Conditions to Accept and Redeem Electoral Bonds:

- Any party that is registered under **section 29A of the Representation of the Peoples Act, 1951**, and has secured at least one percent of the votes polled in the most recent General elections or Assembly elections are eligible to receive electoral bonds.
- The party will be allotted a verified account by the Election Commission of India (ECI) and the electoral bond transactions can be made only through this account.
- The electoral bonds will **not bear the name of the donor**. Thus, the political party might not be aware of the donor's identity.

### Why were Electoral Bonds Introduced in India?

- According to the central Government, the electoral bonds were being introduced to ensure that all the donations made to a party would be **accounted for in the balance sheets without exposing the donor details** to the public.
- According to an **ADR (Association of Democratic Reforms)** analysis, 69% of the total income of national and regional parties between 2004-05 and 2014-15 was contributed through funding from unknown sources.
- The **255<sup>th</sup> Law Commission Report on Electoral Reforms** observed that opacity in political funding results in **"lobbying and capture" of the government by big donors**.
- The government said that electoral bonds would keep a tab on the use of black money for funding elections.

### Controversy over the Bonds:

- Experts believe that if it's for transparency then the **government must not restrain from allowing details of such donations to be made public**.
- **SBI being a government-owned bank** will hold all the information of the donors which can be favorable to the party in power and also deter certain entities from donating to the opposition **due to fear of penalization**.
- The shareholders of a corporation donating will remain unaware of the company's contribution to the political
- Voters, too, will have no idea of how, and through whom, a political party has been funded.

- Anonymity in the identity of the donor **could lead to an influx of black money**.
- It was alleged that the **scheme was designed to help big corporate houses donate money without their identity** being revealed. It threatens the spirit of democracy.
- In 2019, the Supreme Court held that all political parties who had received donations through electoral bonds must submit details to the Election Commission of India. This undercuts a fundamental constitutional principle, the **freedom of political information**, which is an integral element of Article 19(1) (a) of the Constitution.

### Election Commission of India's view on Electoral Bonds:

- The Election Commission on April 10, 2019, told the Supreme Court of India that while it was not against the Electoral Bonds Scheme, it did **not approve of anonymous donations** made to political parties.

### UDAN DAY

*The fourth anniversary of the UDAN scheme has been commemorated as UDAN Day on 21 October.*

#### About:

- The government has acknowledged the contribution of the UDAN initiative and identified October 21 as UDAN Day.
- The Government has approved 78 new routes under the 4<sup>th</sup> round of Regional Connectivity Scheme – UDAN with a special focus on North-Eastern Regions, Hilly States, and Islands.

#### UDAN Scheme:

- Ude Desh Ka Aam Naagrik (UDAN) was launched as a **regional connectivity scheme** under the **Ministry of Civil Aviation** in 2016.

#### Objectives:

- To make travel **affordable** and **accessible** to all.
- It aims to **boost inclusive national economic** development by the development of **air transport infrastructure** in all regions and the creation of **job growth**.
- **Ensuring connectivity** to the under-served areas in the country by the revival of existing airports and airstrips.
- The scheme UDAN envisages providing connectivity to un-served and under-served airports of the country through the revival of existing airstrips and airports.

#### Features:

- UDAN has a **unique market-based model** to develop regional connectivity.

- Interested airline and helicopter operators can start operations on hitherto un-connected routes by submitting proposals to the **implementing Agency i.e. Airport Authority of India**.
- The operators could seek a **Viability Gap Funding (VGF)** apart from getting various concessions.
- All such route proposals would then be offered for **competitive bidding through a reverse bidding mechanism** and the route would be awarded to the participant quoting the lowest VGF per Seat.
- The successful bidder would then have exclusive rights to operate the route for **three years**.
- A **Regional Connectivity Fund** would also be created to meet the viability gap funding requirements under the scheme.
- Additionally, there would be certain tax **concessions in ATF fuel** from both the Centre and the states and **waivers of landing charges from airport operators**.
- Thus, the UDAN scheme is likely to give a major fillip to tourism and employment generation in the hinterland.

### Challenges:

- **Infrastructure:** Building a greenfield airport isn't enough unless flights can take off and land.
- **Weather conditions** make it difficult for flights to land on the airports located on mountainous terrains on most days.
- **Traffic route:** While the infra challenge might be easier to fix, the bigger challenge is putting in place an ideal network design. Thus, the key is to discover routes where there is sustained traffic, not just in a few months of the year, but all round the year.
- **Capacity:** India's metro airports are largely choked and they have already run out of capacity in terms of landing and parking slots.
- **Time slots:** Subsequently, finding convenient time slots for every route will become an administrative challenge.

### Way Forward:

- To generate steady, predictable traffic, a hub and spoke design should be followed by connecting the large metro airports to the new Udan routes, as opposed to a point-to-point service.
- Though the Udan routes were intended to help manage this traffic flow from metro routes, it affects more from this rise in air traffic.
- Thus, managing air traffic is a complex problem to solve, showing that UDAN has a long way to go to ensure seamless connectivity in India.

## SARDP-NE

*The Ministry of Road Transport and Highways has enhanced the funds under Special Accelerated Road Development Programme in North Eastern Areas (SARDP-NE).*

### About:

- Under the revised allocation, almost double the amount originally allocated has been allowed. Of this, Rs 300 crore is specifically marked for the Arunachal Pradesh package.

### About SARDP-NE Scheme:

- **Objectives of SARDP-NE:**
  - ♦ Upgrade National Highways connecting State Capitals to 2 and 4 lanes.
  - ♦ Improve roads of strategic importance in the border area.
  - ♦ Improve connectivity to neighboring countries.
- It is a mega road development program of the Ministry of Road Transport & Highways in North East region of India.
- The road development program comprises of eight states i.e. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Sikkim.
- It envisages providing road connectivity to all the district headquarters in the northeastern region by minimum 2 lane highway standards.
- The program is planned in two phases (A & B) including Arunachal Package where Phase-A is under progress and Phase-B is in the conceptual stage.
- It is also aimed at providing road connectivity to backward and remote areas, areas of strategic importance, and neighboring countries.

## CORPORATISATION OF ORDNANCE FACTORIES

*The Centre has decided to corporatize the Ordnance Factory Board (OFB)*

### About:

- The move has been strongly opposed by the federations of the workers from 41 ordnance factories and allied units across the country.
- In September 2020, an Empowered Group of Ministers (EGoM) for Corporatization was constituted under the chairmanship of the Defence Minister.

### Background:

- At least three committees on Defence reforms set by the governments between 2000 and 2015 have recommended the corporatization of OFB but it had not been implemented so far.

- In the fourth tranche of the Atmanirbhar Bharat initiative announced in May 2020 the decision of Corporatisation of OFB for 'improving autonomy, accountability, and efficiency in ordnance suppliers was incorporated.

#### Reasons for Corporatization:

- The Comptroller and Auditor General (CAG) in its report of 2019 on the OFB highlights a few of the lacunae, which ails this organization.
- Overheads (expenses not directly attributed to creating a product or service) constitute a staggering 33% of the overall budget for the year and the major contributors being supervision costs and indirect labor costs.
- The CAG reported that the Ordnance factories achieved production targets for only 49% of the items and more than half the inventory (52%) was store-in-hand, procured for the manufacture but not used within the year by the factories.
- Few incompetencies and irregularities have been reported in the working of the OFB.

#### Concerns:

- It is believed that corporatization will result in the conversion of the OFB into one or more 100 percent government-owned entities under the Companies Act, 2013 like other public sector undertakings.
- One of the main apprehensions of the employees is that corporatization would eventually lead to privatization which may lead to job losses and exploitation of the workforce.
- Another key concern has been that the corporate entities would not be able to survive the unique market environment of defense products that have very unstable demand and supply dynamics.

#### Ordnance Factory Board (OFB):

- It is an umbrella body for the ordnance factories and related institutions, and is currently a subordinate office of the Ministry of Defence (MoD) and has its headquarters in Kolkata, West Bengal.
- It is a conglomerate of 41 factories, 9 Training Institutes, 3 regional marketing centers, and 5 regional controllers of safety.
- Its production includes Civilian and military-grade arms and ammunition, explosives, propellants and chemicals for missile systems, military vehicles, armored vehicles, optical devices, parachutes, support equipment, troop clothing, and general store items.

### GUJARAT'S DISTURBED AREAS ACT

*The President has given his assent to Gujarat's Disturbed Area Act passed by the Gujarat Assembly.*

#### About:

- The law has made some important amendments to The Gujarat Prohibition of Transfer of Immovable Property and Provisions of Tenants from Eviction from Premises in Disturbed Areas Act.
- This law is popularly known as the '**Disturbed Areas Act**'.
- The Act was first introduced in Ahmedabad in 1986.
- At that time, due to large scale and continuous riots in Ahmedabad city, several areas started witnessing distress sale of properties mainly by people of a particular community.
- To check that, the then Gujarat government had brought in an ordinance. Later, it was converted into the DA Act in 1991.
- Under the Disturbed Areas Act, a district **Collector can notify a particular area of a city or town as a "disturbed area"**. This notification is generally done based on the history of communal riots in the area.
- Then, **the transfer of immovable property in the disturbed area can take place only after the Collector** expressly signs off on an application made by the buyer and the seller of the property. In the application, the seller has to attach an affidavit stating that she/he has sold the property of her/his free volition and that she/he has got a fair market price.
- **Violation of the Act's provisions**, that is, if the property in a notified disturbed area is transferred without the Collector's permission, invites imprisonment and a fine and the state government claims it is aiming to check communal polarization of various parts of the state through the Act.
- The Act is applicable in **Ahmedabad, Vadodara, Surat, Himmatnagar, Godhra, Kapadvanj, and Bharuch**.

#### Why was the amendment needed?

- There were reports of anti-social elements selling and buying properties after either threatening people or luring them with higher prices in "disturbed" areas.
- This had resulted in **clustering or polarisation of localities**.

#### Recent Amendments:

- The amended Act gives the Collector more powers to ascertain if the demographic equilibrium in the area is maintained.
- Also, the state government is now authorized to review a decision taken by the Collector. The state government can review the decision even if no appeal is made against the decision of the collector.
- A provision has been made for the creation of a **Special Investigation Team (SIT)** or committee to probe these aspects.
- The provisions of the Act will not apply to the government's rehabilitation.

- Earlier only those areas which had witnessed communal riots would be notified as 'disturbed areas'. However, now, the government can notify any area as a 'disturbed area' where it sees the possibility of a communal riot, or where a particular community's polarization is taking place.

#### The penal provisions for violation in the amended act:

- The amendment has increased the punishment to imprisonment between three and five years.
- The fine has also been increased to Rs 1 lakh, or 10% of the jantri rate (ready reckoner of property prices in different parts of the state) of the property, whichever is higher.

### WOMAN HAS RIGHT OF RESIDENCE IN 'SHARED HOUSEHOLD' OF IN-LAWS: SC

*Supreme Court's recent verdict states that the victims of domestic violence have a right to residence at a shared household owned by in-laws.*

#### About:

- The verdict came on a plea by a Delhi resident against an order of the Delhi High Court setting aside a trial court decision allowing his plea to evict his daughter-in-law from the first floor of his property in New Friends Colony.
- The judgment dealt with the statutory scheme of the Protection of Women from Domestic Violence Act, 2005.
- It has allowed women to fight domestic violence cases to reside in the 'shared household' even if her husband had no legal right to the house and the same was owned by the father-in-law or mother-in-law.
- The court said that the relief granted right to the residence to a married woman under the domestic violence law by a criminal court is relevant and could be considered even in civil proceedings seeking her eviction from the matrimonial home (the residence in which a husband and wife have lived together).
- The wife would have the right to claim the "shared household" of the joint family under the Domestic Violence Act, 2005.
- **Section 2(s) of the Domestic Violence Act** defines "shared property", as the property owned by a woman's husband, or by the joint family of which the husband is a member.

#### Reversed the Earlier Verdict:

- In its 2006 judgment in **the case S.R. Batra Vs. Taruna Batra**, a two-judge Bench of the court had disallowed the woman involved from claiming any right to live in the said house since it belonged to the mother-in-law of the respondent and did not belong to her husband.

#### Domestic Violence in the Country:

- Domestic violence in this country is rampant and several women encounter violence in some form or the other or almost every day, however, it is the least reported form of cruel behavior.
- The National Family Health Survey-4 (2015-16) (NFHS-4) suggests that 30% of women in India in the age group of 15-49 years have experienced physical violence.
- As per the UN Women, globally in 2019-20, 243 million women and girls (aged 15-49) across the world have been subjected to sexual or physical violence by an intimate partner.
  - ♦ Less than 40% of women who experience violence have sought help or reported the crime.
  - ♦ Less than 10% of those women seeking help go to the police.

#### Reasons:

- Women continue to be vulnerable to these crimes because of:
  - ♦ Non-Retaliatio
  - ♦ Absence of laws addressing their rights comprehensively.
  - ♦ Ignorance of the existing statutes.
  - ♦ Societal attitude, stigma, and conditioning also made women vulnerable to domestic violence and these are the main factors for under-reporting of cases.
- This set of circumstances ensured that a majority of women preferred to suffer in silence, not out of choice but of compulsion.

### AYUSHMAN SAHAKAR SCHEME

*The Union Minister of State for Agriculture launched Ayushman Sahakar Scheme.*

#### About:

- It is a scheme to assist cooperatives in the creation of healthcare infrastructure in the country.
- The idea of the scheme has been inspired by what successful cooperatives have done in the healthcare sector in Kerala.

#### Key Features of the Scheme:

- The scheme is formulated by **the National Cooperative Development Corporation (NCDC)**.
- NCDC will extend term loans to prospective cooperatives.
- **A fund** will be created for the purpose.
- Any Cooperative Society with a suitable provision in its bylaws to undertake healthcare-related activities would be able to access the NCDC fund.
- NCDC assistance will flow either through the State Governments / UT Administrations or directly to the eligible cooperatives.

- The scheme also **provides working capital** and margin money to meet operational requirements.
- The scheme provides **interest subvention of one percent to women** majority cooperatives.

### Why this Scheme?

- More than 50 cooperative hospitals are running in the country with a bed strength of 5000 beds.
- They are proving beneficial in rural areas due to their strong presence and providing comprehensive health care services especially in the Covid-19 pandemic.
- With this scheme, villagers will get many facilities including hospitals, medical colleges.

### About Cooperatives

- According to the International Labor Organization (ILO), a **cooperative** is defined as an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise.

### Constitutional Provisions regarding Cooperatives:

- The 97<sup>th</sup> Amendment Act, 2011 added a new Part IXB regarding the cooperatives working in India.
- The word “cooperatives” was added after “unions and associations” in Article 19(1)(c) under Part III of the Constitution. This enables all the citizens to form cooperatives by giving it the status of the fundamental right of citizens.
- A **new Article 43B** was added in the Directive Principles of State Policy (Part IV) regarding the “promotion of cooperative societies”.

### About NCDC:

- The National Cooperative Development Corporation (NCDC) was established by an Act of Parliament in 1963 as a **statutory Corporation under the Ministry of Agriculture & Farmers Welfare**.
- Its Head Office is located in New Delhi.
- It is an autonomous financial institution for the promotion of cooperatives in the country.
- Its functions include planning, promoting, and financing programs for production, processing, marketing, storage, export and import of agricultural produce, the supply of consumer goods and collection, processing, etc.
- The sources of funds of NCDC include internal accruals, market borrowings, and allocations from the Government of India including International assistance.
- Its recent initiatives are Mission Sahakar 22, which aims to double farmers' income by 2022, and Scheme on Internship Programme (SIP) named Sahakar Mitra.

## DISTRICT DEVELOPMENT COUNCILS (DDC)

*The Central Government has amended the Jammu and Kashmir Panchayati Raj Act, 1989, to facilitate the setting up of District Development Councils (DDC).*

### About:

- The legislation was brought in by the **Ministry of Home Affairs**.

### What are District Development Councils (DDC)?

- DDCs are set to become a **new unit of governance in Jammu and Kashmir**.
- This structure will include a DDC and a District Planning Committee (DPC).
- J&K Panchayati Raj Rules, 1996, have also been amended to establish DDCs.
- This system shall replace the District Planning and Development Boards in all districts.
- It will also prepare and approve district plans and capital expenditure.
- The term of the DDC will be five years.
- The electoral process will allow for reservations for Scheduled Castes, Scheduled Tribes, and women.
- The Additional District Development Commissioner (or the Additional DC) of the district shall be the Chief Executive Officer of the District Development Council.
- The **DDCs will form five standing committees**, for Finance, Development, Public Works, Health and Education, and Welfare.
  - ♦ The scope of the functions of the DDCs has been amplified by the addition of the planning process being handed over directly to the elected representatives.
  - ♦ The Act mentions that the Council will hold at **least four “general meetings” in a year**, one in each quarter.

### Where do the DDCs fit in?

- The Councils will oversee the functions of the Halqa Panchayats and the Block Development Councils in tandem with the line departments of the Union Territory.

### Centre's objective behind this new structure:

- This will facilitate the establishment of an elected third tier of the Panchayati Raj institution which marks the implementation of the entire 73rd Amendment Act in J&K.
- The focus of the new idea is that systems that had been made defunct by earlier J&K governments are being revived under the Centre's rule in the state through the Lieutenant Governor's administration.
- These new amendments are intended to kick start the political process in the Union Territory.

- The DDCs will be the first test and the Centre may be calculating that getting enough people to contest the DDC elections would help weaken the separatist tendencies in the Union Territory and will hasten the development in the Jammu and Kashmir.

## 15 YEARS OF RTI ACT

*The Right to Information (RTI) Act has recently completed its 15 years of coming into force.*

### About:

- More than 2.2 Lakhs cases are pending before State and Central Information Commissions.
- The increasing backlog is exacerbated by the fact that most Commissions are functioning at **reduced capacity**, including the **Central Information Commission (CIC)**.

### Performance of various states in implementing the RTI Act:

- Maharashtra had the highest number of pending appeals, with over **59,000** cases, followed by **Uttar Pradesh (47,923)** and the **CIC (35,653)**.
- At the current rate of disposal, the **Odisha Commission** would take more than **seven years** to dispose of all **pending complaints**, while the **CIC** would take more than **two years**.
- **Odisha** is functioning with just **four commissioners**, while Rajasthan has only three.
  - ♦ **Jharkhand** and **Tripura** have no commissioners at all and have been defunct for months.
  - ♦ The **CIC** has **no chief** and only **five commissioners**.
- The analysis also found that government officials **face hardly any punishment** for **violating the law**.

### About RTI:

- It has been enacted by the **Parliament** and has come into force from 15 June 2005.
- It mandates **timely response** to **citizen requests** for government information.
- The right to information includes access to the information which is held by or under the control of **any public authority** and **includes the right to inspect the work, document, records, taking notes, extracts or certified copies** of documents/ records and certified samples of the materials and obtaining information which is also stored in electronic form.
- In the normal course, information to an applicant is to be supplied within **30 days** from the receipt of the application by the public authority.
  - ♦ If the information sought **concerns the life** or liberty of a person, it shall be supplied within **48 hours**.

- ♦ In case the application is sent through the Assistant Public Information Officer or it is sent to a wrong public authority, five days shall be added to the period of thirty days or 48 hours, as the case may be.

### Historical Background:

- The genesis of **RTI law** started in **1986**, through the judgment of Supreme Court in **Mr. Kulwal v/s Jaipur Municipal Corporation case**, in which it directed that **freedom of speech** and **expression** provided under **Article 19** of the Constitution implies Right to Information, as without information the freedom of speech and expression cannot be fully used by the citizens.
- Thus the Indian Parliament enacted the Right to **Information Act, 2005**.

### Objectives:

- To empower the citizens, **promote transparency** and **accountability** in the working of the Government.
- To contain **corruption**, and **to enhance people's participation** in the democratic process.

### Significance:

- Access to information **can empower the poor** and the **weaker sections of society** to demand and get information about public policies and actions, thereby leading to their welfare.
- The right to information opens up the **government's records** to **public scrutiny**, thereby arming citizens with a vital tool to inform them about what the government does and how effectively, thus making the **government more accountable**.
- **Improves decision making** by the public authority by **removing unnecessary secrecy**.

### Challenges:

- Different types of information are sought which has no public interest and sometimes can be used to misuse the law and harass the public authorities.
- Information commissioners do not have adequate authority to enforce the RTI Act.
- In case of award of compensation to activists by public authority as ordered by the commission, compliance cannot be secured.
- Lack of adequate infrastructure and staff for running information commissions.

### Way Forward:

- The need to scrutinize the functioning of information commissions now is perhaps greater than ever before, given the unprecedented crisis gripping the nation due to the COVID-19 pandemic.

# 5

# SOCIAL ISSUES

## ICMR SERO-SURVEY

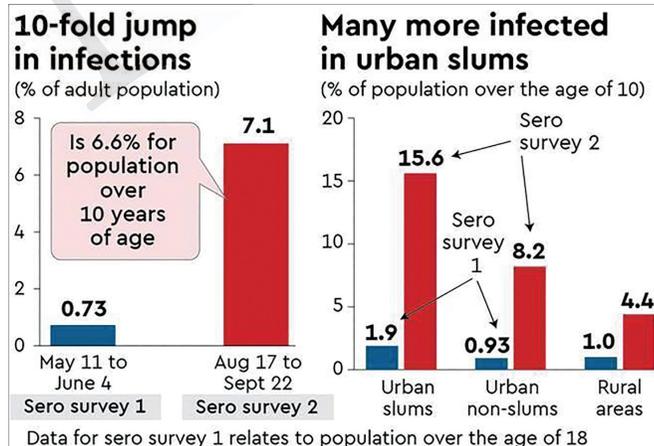
*The second national Sero-Survey is released by the Indian Council of Medical Research (ICMR)*

### About:

- It was done to assess the real exposure of the Indian population to the COVID-19 virus.
- The survey reveals that over 6.6% of the individuals, or 1 in 15 of those above 10 years, had been exposed to Covid-19 by August 2020.

### The Key Finding of the Survey:

- Urban slum and urban non-slum areas had higher SARS-CoV-2 infection prevalence than that of the rural areas in the country.
- Of 29,082 people surveyed from August 17 to September 22, 6.6 percent showed evidence of past exposure to Covid-19.
- Lower infection to case ratio** in August compared to May reflects a substantial increase in testing and, detection.
- 7.1 percent of the adult population showed evidence of past exposure to Covid-19.
- In the light of the upcoming festivities, winter season, and mass gathering, inventive containment strategies need to be implemented by the states.
- The survey was conducted in the same 700 villages/wards (in urban) from 70 districts from 21 states covered during the first survey.
- Since a large proportion of the population is yet susceptible- There is a need to avoid fatigue and the **5T strategy (Test, trace, treat, teamwork and tracking)** to be followed.



### What is Sero-Survey?

- In this survey, blood samples are randomly collected from individuals with their consent.
- They are conducted by drawing blood samples and checking for a specific class of **antibodies called IgG** that appear within two weeks of infection.
- Because it is yet unclear how long antibodies detectably persist in the body, their presence **only indicates past exposure to — and not the presence of — the virus.**
- The collected samples are tested using **COVID Kavach ELISA kits** approved by the Indian Council of Medical Research (ICMR).

### Why Sero-Testing?

- The move will not only help the government and its agencies monitor Covid-19 trends but also check for community transmission in any part of the country.

### Who will be the Target Population?

- For the serosurvey, population groups will consist of low- as well as high-risk populations.
- The **low-risk group** will include outpatient attendees and pregnant women, while healthcare workers will be surveyed among the **high-risk population.**

### COVID-19 SEROLOGICAL TESTS

Serological tests for SARS-CoV-2 can show a person has been exposed to the virus, but authorities are warning that such tests have limits to what they can tell us

A serological test looks at blood serum, the fluid part of plasma that is left after cells have coagulated

It tells us about the presence of antibodies which are made in response to specific virus antigens

Scientists are yet to confirm how effective SARS-Cov-2 antibodies or immunoglobulins are in protecting from a second infection

Main types of tests available or in developments	Time taken	How they work	
Rapid diagnostic tests	10-30 mins	<p>Blood sample passes over a line that detects antibodies and changes color</p>	These tests can indicate the presence or absence of antibodies of interest but they can't tell us about the quantity of antibodies or how effective they are at stopping virus growth
Enzyme-linked immunosorbent assays	2-5 hours	<p>Sample exposed to a plate coated with virus antigen</p>	<ul style="list-style-type: none"> <li>Colour is added to react with antibodies that attach to antigen</li> <li>Intensity of colour indicates presence of antibodies</li> </ul> <p>Both these tests can tell us about the quantity of antibodies present, but they cannot tell us how effective they are at stopping virus growth</p>
Chemiluminescent immunoassays	1-2 hours	<p>Sample exposed to a plate coated with virus antigen</p>	<ul style="list-style-type: none"> <li>Light-giving chemical added to react with antibodies that attach to antigen</li> <li>Intensity of light indicates presence of antibodies</li> </ul>

## TECH FOR TRIBALS INITIATIVE

*The Tribal Cooperative Marketing Development Federation of India (TRIFED) has launched "Tech For Tribals" program.*

### About:

- Tech For Tribals program aims to **transform 5 crores, Tribal Entrepreneurs**, by capacity building and imparting entrepreneurship skills to tribal forest produce **gatherers enrolled under the Pradhan Mantri Van Dhan Yojana (PMVDY)**.
- Under the program, trainees will **undergo a 30 days training program** over six weeks.
- The program is launched in collaboration with Institutes of National Importance.
- The Partner institutions will develop course contents relevant for Entrepreneurship in Value Addition and Processing of Forest Produces.
- The course curriculum will include the development of positive psychology, entrepreneurial competencies, capacity utilization, Product positioning - Grading / Sorting, Branding, Packaging, etc.
- This program will mainly entail the **three pillars – Engagement, Capacity Building, and Market linkages for commercialization of the tribal entrepreneurs.**

### Van Dhan Scheme

- The scheme was launched in 2018 by TRIFED.
- The initiative aims to promote (Minor Forest Produce) MFPs-centric livelihood development of tribal gatherers and artisans.
- It mainstreams the tribal community by promoting primary level value addition to MFP at grassroots level.
- Under this scheme, the **Van Dhan Vikas Kendras** are constituted to provide for skill up-gradation, capacity building training and setting up of primary processing and value addition facilities.
- The scheme will be implemented through Ministry of Tribal Affairs as Nodal Department at the Central Level and TRIFED as Nodal Agency at the National Level.
- At State level, the State Nodal Agency for MFPs and the District collectors play major role in implementation.
- Locally the Kendras are proposed to be managed by a Managing Committee (an SHG) consisting of representatives of Van Dhan SHGs in the cluster.
- **Composition:** As per the plan, TRIFED will facilitate establishment of MFP-led multi-purpose Van Dhan Vikas Kendras, a cluster of 10 SHGs comprising of 30 tribal MFP gatherers each, in the tribal areas.

### TRIFED:

- It is a **national-level apex organization** functioning under the **administrative control of the Ministry of Tribal Affairs**. It was **established in 1987**.
- It aims to empower tribal people with knowledge, tools, and a pool of information so that they can undertake their operations more systematically and scientifically.
- It aims for the **socio-economic development of tribal people** in the country by way of the marketing development of tribal products.
- It also involves **capacity building of the tribal people** through sensitization, the **formation of Self Help Groups (SHGs), and imparting training** to them for undertaking a particular activity.

## AMBEDKAR SOCIAL INNOVATION & INCUBATION MISSION

*Ambedkar Social Innovation and Incubation Mission (ASIIIM) was launched under Venture Capital Fund for Scheduled Castes (SCs).*

### About:

- **The Ministry of Social Justice** had launched the **Venture Capital Fund for SCs (VCF-SC)** in **2014-15** to develop entrepreneurship amongst the **SC/Divyang youth** and to enable them to become **'job-givers'**.
- The objective of this fund is to provide **concessional finance** to the entities of the **SC entrepreneurs**.

### Ambedkar Social Innovation and Incubation Mission:

- It was made **to create start-up companies headed by Dalit techies**.
- Under it, **1,000 SC youth will be identified** in the **next four years** with **start-up ideas** through the **Technology Business Incubators (TBIs)** in various higher educational institutions.
- They will be funded with **30 lakh rupees** in **three years** as **equity funding** to translate their start-up ideas into **commercial ventures**.
- Successful ventures would further qualify for venture funding of up to **five Crore rupees** from the Venture Capital Fund for SCs.

### Eligibility:

The following SC/Divyang youth would be eligible for support under ASIIIM:

- Students who have been awarded under the **Smart India Hackathon** or **Smart India Hardware Hackathon** being conducted by the **Ministry of Education**.
- Innovative ideas focusing on the **socio-economic development** of the society identified in the **TBIs**.

- Start-ups that are **nominated** and supported by corporates through **Corporate Social Responsibility (CSR) funds**.

#### Significance:

- It will **promote innovation in the SC youth** and would help them to become **job-givers from job-seekers**. It would further give a fillip to the '**Stand Up India**' initiative of the Prime Minister.

## POVERTY AND SHARED PROSPERITY REPORT

*The World Bank has recently released its biennial Poverty and Shared Prosperity Report.*

#### About:

- The **Poverty and Shared Prosperity** series provide the latest and most accurate estimates on trends in global poverty and shared prosperity.
- According to the report, **Global extreme poverty** is expected to rise for the first time in 20 years because of the disruption caused by COVID-19, exacerbating the impact of conflict and climate change, which were already slowing down poverty reduction.

#### Highlights of the Report:

- The pandemic may push another **88 million to 115 million into extreme poverty or having to live on less than \$1.50 per day**, resulting in a total of 150 million such individuals.
- **Around 9.1% to 9.4% of the world will be affected by extreme poverty in 2020 as compared to 7.9%** in the counterfactual scenario where the pandemic had not raged across the world.
- Many of the newly poor individuals will be from countries that already have high poverty rates while many in **middle-income countries (MICs)** will slip below the poverty line, as per the report. Some 82% of the total will be in MICs.
- It mentions that **the "new poor" will:**
  - ♦ Be more urban poor.
  - ♦ Be more engaged in informal services and manufacturing and less in agriculture.
  - ♦ Live in congested urban settings and work in the sectors most affected by lockdowns and mobility restrictions.
- **India specific data:** The report mentions that as the Indian Government decided not to release 2017-18 All India Household Consumer Expenditure Survey data from the 75th Round, there is an "important gap in understanding poverty in South Asia. Therefore, the Bank has estimated India's poverty numbers for 2017 based on "strong assumptions", resulting in "considerable uncertainties".

#### Proposed Strategy to address the issue by the World Bank:

- The World Bank proposes that countries will need to be prepared for a different economy post-COVID, by allowing capital, labor, skills, and innovation to move into new businesses and sectors.
- Proper policy actions are required.
- To focus on foundational development problems, including conflict and climate change as the key areas.

#### About the World Bank

- It traces its origin to the **Bretton Woods Conference**, officially known as the **United Nations Monetary and Financial Conference**. It was a gathering of delegates from 44 nations that met in 1944 in Bretton Woods, New Hampshire (USA), to agree upon a series of new rules for international financial and monetary order after the conclusion of World War II.
- The two major accomplishments of the conference were the creation of the **International Bank for Reconstruction and Development (IBRD)** and the **International Monetary Fund (IMF)**.
- The World Bank Group is an international partnership comprising 189 countries and five constituent institutions that works towards eradicating poverty and creating prosperity.
- The **five development institutions** under the World Bank Group are:
  - ♦ International Bank for Reconstruction and Development (IBRD)
  - ♦ International Development Association (IDA)
  - ♦ International Finance Corporation (IFC)
  - ♦ Multilateral Guarantee Agency (MIGA)
  - ♦ International Centre for the Settlement of Investment Disputes (ICSID)

## NSO TIME-USE SURVEY

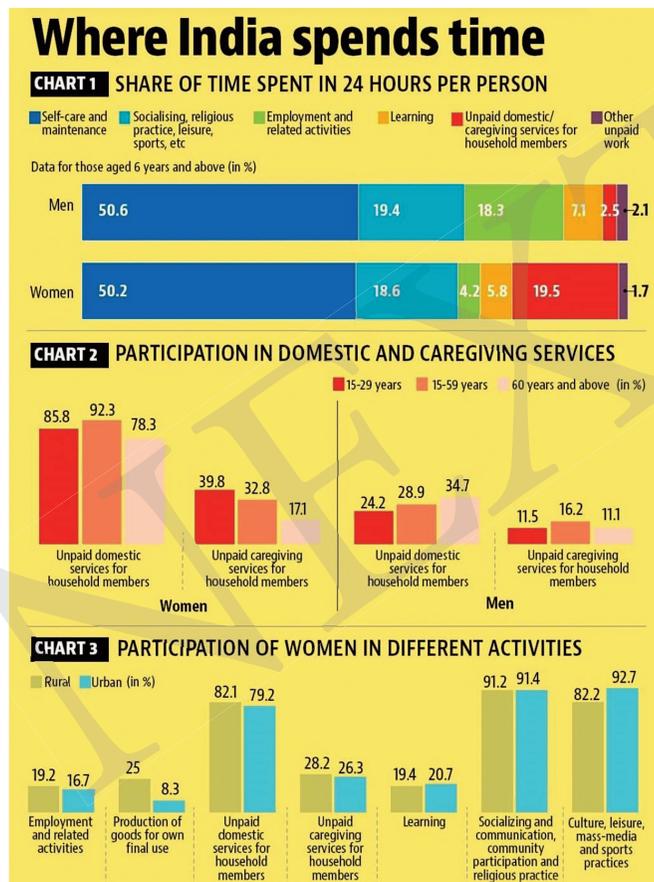
*The National Statistical Office (NSO) has conducted the first Time Use Survey (TUS) in India.*

#### About:

- The primary objective of this is to **measure the participation of men and women in paid and unpaid activities**.
- It is an important source of information on the **time spent in unpaid caregiving activities, volunteer work, unpaid domestic service-producing activities** of the household members.
- It also provides **information on time spent on learning, socializing, leisure activities, self-care activities, etc.**, by the household members.

**Key Findings:**

- **Time spent on unpaid activities:** An average Indian woman spends 19.5% of her time engaged in either unpaid domestic work or unpaid caregiving services. While men spend just 2.5% of their 24 hours on these activities.
- **In every other group of activities** – from employment and learning to socializing, leisure, and self-care activities like sleeping and eating – men spend a higher share of their daily time than women.
- There seems to be **an inverse relationship between age and the amount of time spent by women on household chores**, but a direct one between age and the time spent by men on these.
- While women above the age of 60 see a sharp fall in their domestic work burden, men tend to devote greater time to domestic work when they cross 60.



**STARS PROGRAMME**

*The Union Cabinet has approved implementation of the World Bank aided-Strengthening Teaching-Learning and Results for States (STARS) project.*

**About:**

- The STARS project would be implemented as a **new Centrally Sponsored Scheme** under the Department of School Education and Literacy, **Ministry of Education (MoE)**.
- **Aim:** These are aligned with the objectives of the National Education Policy (NEP) 2020 of Quality-Based Learning Outcomes.
- Its focus is on strengthening **the government-managed school education system**.
- Focus on initiatives of **PM e-Vidya**, Foundational Literacy, and Numeracy Mission and National Curricular and Pedagogical Framework for Early Childhood Care and Education as part of the Atmanirbhar Bharat Abhiyan.
- It will support states in terms of education under the New Education Policy.
- It will strengthen public school education and support the country's goal of providing 'Education for All' and it will help improve learning assessment systems, strengthen classroom instruction and remediation, facilitate school-to-work transition and strengthen governance and decentralized management.
- **Key Areas are:**
  - ♦ Access and retention
  - ♦ Right to education entitlements
  - ♦ Quality interventions
  - ♦ Teacher education and training
  - ♦ Gender and equity
  - ♦ Inclusive education, and Upgradation of the learning environment.
- The six states will be covered under the program. These are **Himachal Pradesh, Rajasthan, Maharashtra, Madhya Pradesh, Kerala, and Odisha**.

**Major Components of the Scheme:**

- **PARAKH** (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development) will act as the **National Assessment Centre**.
  - ♦ PARAKH will be an autonomous institution under the Union Education Ministry that will set norms for student assessment and evaluation for all school boards across the country, most of which currently follow norms set by State governments.
  - ♦ It will also guide standardized testing to monitor learning outcomes at the State and national levels.
- **Contingency Emergency Response Component (CERC):** It will help the government respond to situations leading to loss of learning such as school closures/infrastructure damage, inadequate facilities, and use of technology for facilitating remote learning, etc. The CERC component would facilitate:
  - ♦ The rapid re-categorization of financing (to provide flexibility in the crisis).

- The utilization of streamlined financing request procedures (so that delays in financing are eliminated).

## GLOBAL HUNGER INDEX (GHI) 2020

*Recently, the Global Hunger Index 2020 was published.*

### About:

- India has been ranked at 94 among 107 countries in the Global Hunger Index (GHI) 2020.
- In 2019 India's rank was 102 out of 117 countries.
- India's rank is lower than its immediate neighbors such as Bangladesh (75) and Pakistan (88).

### Highlights of the Report:

- Globally, nearly 690 million people are undernourished, according to the report, which warns that the COVID-19 pandemic could have affected the progress made on reducing hunger and poverty.
- **Africa especially the nations lying South of the Sahara and South Asia have the highest hunger and undernutrition levels** among world regions, with 2020 GHI scores of 27.8 and 26.0, respectively both considered **serious**.
- The report mentions that the world is not on track to achieve the second Sustainable Development Goal known as Zero Hunger for short by 2030.

### Indian Scenario:

- **India has a score of 27.2** which reckons that India has a level of hunger that is **"serious"**.
- **India has the highest prevalence of wasted children under five years in the world**, which reflects acute undernutrition and the situation has worsened in the 2015-19 period, when the prevalence of child wasting was 17.3%, in comparison to 2010-14, when it was 15.1%.
- Child stunting has improved significantly, from 54% in 2000 to less than 35% now.
- Child wasting, on the other hand, has not improved in the last two decades and is rather worse than it was a decade ago.
- India has improved in both child mortality rates, which are now at 3.7%, and in terms of undernourishment, with about 14% of the total population which gets an insufficient caloric intake.

### Probable reasons for India's Poor Performance:

- Top-down approach
- Poor implementation processes
- Lack of effective monitoring and siloed approaches in tackling malnutrition (missing convergence)

- The convergence of too many welfare schemes makes the efficacy of those schemes less visible on the ground.

### About Global Hunger Index:

- It is an annual Report which is jointly published by **Concern Worldwide and Welthungerhilfe**.
- It was first published in 2006 and since then it is being published every year in October. The 2020 edition marks the 15<sup>th</sup> edition of the GHI.
- The report aims to comprehensively measure and track hunger at the global, regional, and country levels.
- The GHI scores are calculated based on four indicators:
  - ♦ **Undernourishment:** Share of the population with insufficient caloric intake.
  - ♦ **Child Wasting:** Share of children under age five who have low weight for their height, reflecting acute undernutrition.
  - ♦ **Child Stunting:** Share of children under age five who have low height for their age, reflecting chronic undernutrition.
  - ♦ **Child Mortality:** The mortality rate of children under the age of five.
- Based on the values of the four indicators, the GHI determines hunger on a 100-point scale where 0 is the best possible score (no hunger) and 100 is the worst.

## KAPILA KALAM PROGRAM

*The Union Education Minister has launched the 'KAPILA' (Kalam Program for Intellectual Property Literacy and Awareness campaign) program.*

### About:

- It was launched on the **89<sup>th</sup> birth anniversary** of former President and Scientist Late Dr. APJ Abdul Kalam.
- It has also been decided to celebrate the week of October 15<sup>th</sup> to 23<sup>rd</sup> as '**Intellectual Property Literacy Week**'.
  - ♦ Several activities will be organized under the initiative such as launching online programs to **increase awareness, imparting knowledge** on the process of applying for a **patent, holding debates, contests, quizzes**, etc.
- The **Institution Innovation Council (IIC 2.0)** annual report was also presented on the occasion and the launch of IIC 3.0 was announced.
- The Institution Innovation Council was established by the Ministry of Education in 2018. So far, IICs have been established in about **1700 higher educational institutions**.
- IIC will be established in 5000 higher educational institutions under IIC 3.0.

**About “KAPILA” Kalam Program:**

- Under this program, **students pursuing** education in higher educational institutions **will get information** about the correct system of the application process for **patenting their invention**.

**Significance:**

- This campaign will create **awareness** among students for filing applications for patents and students will be able to get benefits from their inventions by patenting them.
- It will promote entrepreneurship and startups in India's higher education infrastructure.
- The program will facilitate the colleges and institutions to **encourage more and more students to file patents**.
- The patent of inventions will lead India towards **self-reliance**.

**Way Forward:**

- India has a proud history of **Nalanda** and **Takshila Universities** so we already had the intellectual property inherited within our culture.
  - ♦ India has to again lead the world as **Vishwaguru** in the field of **patents**.
- For India to become a **\$5 trillion economy**, protecting intellectual property becomes more important.
- Research students and scientists of India engaged in research and development must **apply to preserve** and **safeguard** their inventions.

**SOUTH ASIAN ECONOMIC FOCUS**

*The World Bank has released its biennial South Asia Economic Focus report titled “Beaten or Broken? Informality and Covid-19”.*

**About:**

- The report covers Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.
- The report predicts that the extended closure of schools amid the Covid-19 pandemic could dent India's future earnings as depleted learning levels of students will translate into poorer productivity going forward.

**Key Highlights of the Report:**

- **Impact on Education:**
  - ♦ Around 5.5 million students could drop out of schools across South Asia.
  - ♦ Dropouts, combined with substantial learning losses for those who remain enrolled in schools, would cost South Asia as much as 622 billion USD in future earnings and gross domestic product.
  - ♦ The regional loss is largely driven by India.

- ♦ The projected learning loss for the region is 0.5 years of learning-adjusted years of schooling (LAYS) at present.
- ♦ The children may have forgotten their previous learnings.
- **Impacts on the Economy:**
  - ♦ **Impact on Informal Sector:** The report has flagged damage to businesses, consumption patterns and imposed social hardship on poor and vulnerable households, especially urban migrants and informal workers in the South Asia region. It has also warned against far-reaching consequences apart from these immediate impacts.
  - ♦ **GDP:** The regional GDP of the South Asia region is estimated to contract by 7.7% in 2020.
    - India's Gross Domestic Product (GDP) can contract by 9.6% in 2020-21.
  - ♦ **Labour productivity:** It will also take a greater hit from Covid-19 than most previous natural disasters. Reasons for the decrease in labour productivity are as follows:
    - **Globalization:** The increased integration of the global economy will amplify the adverse impact of Covid-19. Effect on supply chains, export-import and international migration of labour will affect labour productivity.
    - **Capacity underutilization:** Contagion prevention and physical distancing may render some activities, for example, the hospitality sector, unviable unless they are radically transformed, which will take time. Even in less directly affected sectors such as manufacturing, banking and business, severe capacity underutilisation lowers total factor productivity.
    - **Disruptions to training, schooling and other education:** These may occur due to severe income losses as well as lack of access to training and education facilities. Even once restrictions are lifted, the impediment of training will also lower human capital and labour productivity over the long term.

**Way Forward:**

- To avoid the outcome of the pandemic, progress on three fronts is required: Information, Solidarity and Action.
- Education must be at the heart of international solidarity efforts, from debt management and stimulus packages to global humanitarian appeals and official development assistance.
- It is the time to step up international solidarity for children and humanity— and to lay the foundations for a deeper transformation of the way we nurture and invest in our world's youngest generation.
- India as a lower-middle-income country needs to use education as an equalizer for its widespread socioeconomic inequalities. Focus on increasing the education budget in the New Education Policy and decreasing the digital divide are welcome steps to achieve this goal.



# 6

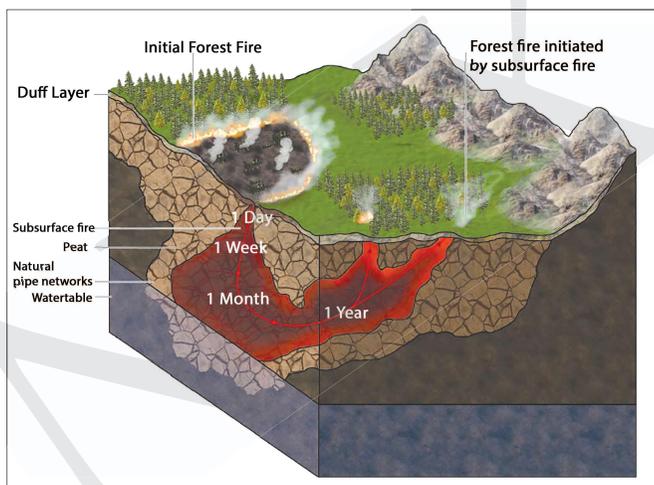
# ENVIRONMENT

## ZOMBIE FIRES

*The fire regimes in the Arctic region are rapidly changing into 'zombie fires'.*

### About:

- Zombie Fire is a fire from a previous growing season that can smolder under the ground which is made up of carbon-rich peat.
- When the weather warms, the fire can reignite, these are also known as **holdover fires**.
- They get their name because they **continue to burn** even after surface **fires are put out**.
- In 2019 and 2020, burning occurred well above the Arctic Circle, a region not normally known to support large wildfires. Though, wildfires on permafrost in Siberia south of the Arctic are not uncommon.



### Causes:

- The major reason for zombie fires is higher than usual temperatures in winter and spring of **2019-20**. Siberia region has undergone severe heatwave in 2020.
- The presence of ancient carbon rich peat soils under permafrost provide a continuous base for vigorous fires underneath.
- The dried tundra and its vegetation are more prone to catch fire easily.

### Impact:

- The fires are turning the **carbon sink (permafrost peat soils)** into a **carbon source** and increasing global warming.
- These soils contain twice as much carbon as there is currently in the atmosphere.
- As the climate and permafrost soils have warmed, microbes have started to break down this organic carbon, which has been frozen and fixed in the permafrost. That has led to a rise in land emissions of CO<sub>2</sub> and methane.

### Way Forward:

- There is an **urgent need** to understand the **nature of fires** in the **Arctic** which are evolving and changing rapidly.
- This study has urged global **cooperation, investment**, and action in monitoring fires.
- It has called for learning from the indigenous peoples of the Arctic about how the fire was traditionally used.
- **New permafrost** and **peat-sensitive approaches** to **wildland firefighting** are needed to save the Arctic.

## SANDALWOOD SPIKE DISEASE (SSD)

*Sandalwood Spike Disease has started infecting the natural habitats in Karnataka and Kerala.*

### About:

- The natural population of sandalwood in Marymoor Sandal Forest of Kerala and various reserve forests in Karnataka, including MM Hills (Malai Mahadeshwara Wildlife Sanctuary), are facing serious threat with return of destructive SSD.
- Presently, there is **no option but to cut down and remove the infected tree to prevent** the spread of the disease.

### Sandalwood Spike Disease (SSD):

- SSD has been one of the major causes for the decline in sandalwood production in the country for over a century.
- It is an infectious disease that is caused by phytoplasma.
  - ♦ Phytoplasmas are bacterial parasites of plant tissues that are transmitted by insect vectors and involved in plant-to-plant transmission.
- There is no cure as of now for the infection
- The disease was first reported in Kodagu in 1899. A million of sandalwood trees were removed in the Kodagu and Mysuru region between **1903 and 1916**.

- The International Union of Conservation of Nature has declared Sandalwood as “Vulnerable” in 1998.

**Reason for Spread:**

- The present rapid spread of the infection is largely due to restrictions on green felling in forests which make.
- Green felling (silviculture felling) is the felling of green trees of one or more types.

**About Sandalwood:**

- Also known as chandan tree or Indian Sandalwood or cendana or white Indian sandalwood.
- It is aromatic dry deciduous forest tree species grown natively in South India.
- This small tropical tree is known for its strength and durability. Therefore, making it valuable in timber industry, furniture making, carving, etc.
- The heartwood and roots also contain ‘sandal oil’ which is valued for use in perfumes, incense, cosmetics, soaps, and medicines. The bark contains tannin, which is used for dye.
- As early as 1792, Tippu Sultan had declared it a ‘Royal Tree’ of Mysuru.
- International Union for Conservation of Nature (IUCN) has categorized the tree “Vulnerable”.

- Red sanders, known for its rich hue and therapeutic properties, is high in demand across Asia, particularly in China and Japan, for use in cosmetics and medicinal products as well as for making furniture, woodcraft and musical instruments.
- **Red sandalwood** has been used for making the bridge and also the neck of the Japanese musical instrument Shamisen and in furniture in China for its porch appearance.

**Important Provisions about Red Sanders**

- It was earlier classified by the International Union for Conservation of Nature (IUCN) as endangered species in 1997 and included it in the Red List but later in 2018, IUCN reclassified it as ‘near threatened’.
- Red sanders remain listed in the Appendix II of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora)
- In response to the demands for the farmers and the reclassification by the IUCN, the Directorate General of Foreign Trade (DGFT), an agency of the Ministry of Commerce and Industry, in 2019 revised its export policy to permit its export if it is obtained from cultivated land.
  - ♦ Earlier, only seized logs from smugglers were being exported depending on state government rules.

**RED SANDERS: FACTFILE**

- ▶ Grows naturally in Andhra Pradesh and north Tamil Nadu in India
- ▶ Listed as Near Threatend by the International Union for Conversation for Nature (IUCN)
- ▶ Highly prized in China for making exquisite furniture, musical instruments and use in alternative medicines
- ▶ A kilo of red sanders bought at around Rs 500 in India can fetch as much as Rs 3000 to Rs 12000 in China
- ▶ Scientists have also found traces of radioactive materials like Thorium and Uranium in red sanders; but experts say the quantity is too small to be used in nuclear reactors as suspected by many
- ▶ The wood is mainly smuggled out of India through northeast and Bhutan

**Red Saunder (Pterocarpus santalinus)/Red Sandalwood:**

- It is also known as Rakht Chandan, Almug or Lal Chandan.
- Red Sandalwood, is a native and endemic to India and can only be found in the southern parts of the Eastern Ghats.
- This tree is valued for the rich red color of its wood. **The wood is not aromatic.** The timber is highly demanded domestically and internationally, and especially in East Asian countries.

**Smuggling Routes**

Red Sanders is smuggled from India mainly to China, Japan, UAE, Malaysia and Singapore. Smuggling to China is mostly done by road via Nepal, and to Malaysia and Singapore from the Chennai port. For UAE, the Mumbai port acts as the transit point. Smuggling to Japan and China also takes place from Manipur and Mizoram.

Source: TRAFFIC India and news reports

## STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS

*The Union Cabinet has ratified the inclusion of seven chemicals under the Stockholm Convention.*

### About:

- The Cabinet has also delegated its powers to ratify **chemicals** under the **Stockholm Convention** to **Union Ministers of External Affairs** and **Environment, Forest and Climate Change** in regard with POPs already regulated under domestic regulations.
- This will enable India to access the **Global Environment Facility (GEF)** financial resources in updating its **National Implementation Plan (NIP)**.

### The following new chemicals are added:

- Chlordecone.
- Hexabromobiphenyl.
- Hexabromodiphenyl ether and Heptabromodiphenylether.
- Tetrabromodiphenyl ether and Pentabromodiphenyl ether.
- Pentachlorobenzene.
- Hexabromocyclododecane.
- Hexachlorobutadiene.

### About the Stockholm Convention:

- The **Stockholm Convention on Persistent Organic Pollutants** was adopted by the Conference of **Plenipotentiaries** in 2001 in **Stockholm, Sweden**, and came into force in **2004**.
- Over 152 countries have ratified the Convention.
- It is a **global treaty** to protect human health and the environment from POPs.
- In implementing the Convention, Governments will take measures to eliminate or reduce the release of POPs into the environment.
- Financial Support:** The **Global Environmental Facility (GEF)** is the designated as interim financial **mechanism for the Convention**.
- India is a party to the Stockholm convention since 2005. This will help in availing technical and financial assistance for implementing measures to meet the obligations of the Convention.

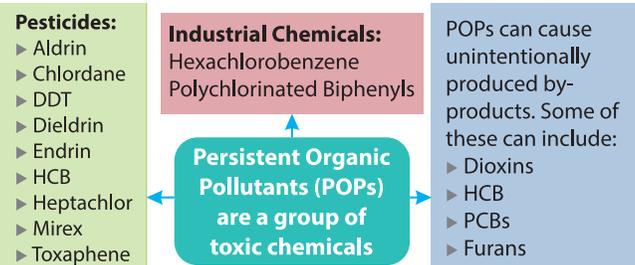
### What are Persistent Organic Pollutants (POPs)?

- Persistent organic pollutants (POPs)** are chemicals of global concern due to their potential for **long-range transport**, **persistence** in the environment, ability to **bio-magnify** and **bio-accumulate** in ecosystems, as well as their significant negative effects on human health and the environment.

- Initially, **12 POPs (also known as Dirty Dozens)** have been recognized under the convention and these can be placed in **3 categories**:
  - Pesticides:** Aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, toxaphene;
  - Industrial chemicals:** Hexachlorobenzene, polychlorinated biphenyls (PCBs); and
  - By-products:** Hexachlorobenzene; polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF), and PCBs.

### Global Environment Facility (GEF)

- GEF is a financial mechanism set up with Rio Earth Summit in 1992. Its headquarters are in Washington D.C.
- The facility is jointly managed by United Nations Development Program, World Bank and United Nations Environment Program.
- It provides funds to the developing countries and transition economies for projects related to climate change, biodiversity, the ozone layer, etc.
- It is a financial mechanism for 5 major international environmental conventions:
  - The United Nations Framework Convention on Climate Change (UNFCCC),
  - The United Nations Convention on Biological Diversity (UNCBD),
  - The Stockholm Convention on Persistent Organic Pollutants (POPs),
  - The United Nations Convention to Combat Desertification (UNCCD), and
  - The Minamata Convention on Mercury.



## INDIA ENERGY FORUM

*The Prime Minister gave inaugural address at 4<sup>th</sup> India Energy Forum CERA Week.*

### About:

- This is the 4<sup>th</sup> such event organized by NITI Aayog and the Ministry of Petroleum & Natural Gas. Around 45 CEOs of major Oil and Gas companies will attend the event.

- The theme of this edition is “**India’s Energy Future in a world of Change**”.
- The objective behind the meeting is to **deliver a global platform to understand best-practices**, discuss reforms, and inform strategies for accelerating investments **into the Indian Oil and Gas value chain**.

**Key Points Discussed by Prime Minister:**

- The Prime Minister pointed that India is the third largest and the fastest growing aviation market in terms of domestic aviation and Indian carriers are projected to increase their fleet size from 600 to 1200 by 2024.
- India’s Energy Plan aims to ensure **energy justice** while fully following India’s global commitments for sustainable growth.
- This means more energy is needed to improve the lives of Indians with a smaller carbon foot-print.
- India’s energy sector to be growth centric, industry friendly and environment conscious.

**India’s Energy Map will have Seven Key Drivers:**

- Accelerating our efforts to move towards a **gas-based economy**.
- **Cleaner use of fossil fuels** particularly petroleum and coal
- Greater reliance on domestic sources to **drive bio-fuels**.
- Achieving the renewables target of **450 GW by 2030**.
- Increasing the contribution of electricity to **de-carbonize mobility**.
- Moving into the **emerging fuels** including hydrogen.
- **Digital innovation** across all the energy systems.

**About India Energy Forum:**

- It is an Indian Organization that represents the energy sector as a whole.
- It was established in 2001 and has its headquarters in New Delhi and most of the major public and private sector organizations in Power, Oil and Gas, Coal, and Renewable Energy have become its members.
- It catalyzes the development of a sustainable and competitive energy sector in India by acting as independent advocate of the industry.
- The Forum works with companies and Governments (Centre and States) to achieve consensus.

**CERAWeek:**

- CERAWeek by IHS Markit has become the world’s premier energy event.
- It stands for Cambridge Energy Research Associates and was founded in 1983 at Cambridge.
- IHS Markit is a global dynamic team that includes more than 5,000 analysts, data scientists, financial experts, and industry specialists providing information expertise in various sectors.

**INTERNATIONAL SNOW LEOPARD DAY 2020**

*International Snow Leopard Day was observed on October 23.*

**About:**

- **International Snow Leopard Day** came into being in 2013, when political leaders from 12 countries for the first time endorsed the ‘**Bishkek Declaration**’ on the conservation of snow leopards.
- The **Global Snow Leopard and Ecosystem Protection Programme (GSLEP)** was also launched on this day.
- A community volunteer program “**Himal Sanrakshak**” was launched followed by the release of origami notebooks based on the theme of combating illegal trade in wildlife.

**About Snow Leopard:**

- They are **majestic carnivorous mammal** found in the **high mountains of Asia**.
- **IUCN Status -Vulnerable**
- Listed in **Schedule I of Wildlife (Protection) Act 1972**.
- Listed in **Appendix I of the CITES**, which makes trading of animal body parts (i.e., fur, bones, and meat) **illegal in signatory countries**.
- Their body structure is perfect for the **cold weather** and they spend their life crossing **thousands of kilometers on steep slopes** to **feed and breed** in the world.

**BASIC FACTS**

- STATUS:** Vulnerable
- POPULATION:** 3,920-6,390 worldwide
- SCIENTIFIC NAME:** Panthera uncia
- RANGE:** Spread over 2 min sq km
- HABITATS:** Cold high mountains
- LIFE EXPECTANCY:** 20+yr (in captivity); 10-12 yrs (in wild)
- PREY:** Blue Sheep, Asiatic ibex, argali

**PHYSICAL FEATURES**

- HEIGHT:** 55-66 M
- LENGTH:** 90-115 M
- TAIL:** 80-100 M

**FOUND IN 12 COUNTRIES**

Russia, Mongolia, Tajikistan, China, Nepal, Bhutan, Pakistan, India, Afghanistan, Uzbekistan, Kyrgyz Republic, Kazakhstan

**CONSERVATION OF SNOW LEOPARD**

At a meeting of the Global Snow Leopard and Ecosystem Protection Program in Delhi, India calls for doubling the population of snow leopards in next 10 years.

**Conservation Efforts in India:**

- The Government of India has launched **Project Snow Leopard (PSL) in 2009**.
- The government is committed to **landscape restoration** for **snow leopard** via participatory landscape-based management plans involving local stakeholders.

- India has identified **three large landscapes** for snow leopard conservation namely, **Hemis-Spiti** across Ladakh and Himachal Pradesh; **Nanda Devi – Gangotri** in Uttarakhand; and **Khangchendzonga – Tawang** across Sikkim and Arunachal Pradesh.
- India is also a party to the **Global Snow Leopard and Ecosystem Protection (GSLEP)** Programme since 2013.
  - The GSLEP is a high-level inter-governmental alliance of all the 12 snow leopard range countries.
  - The snow leopard countries namely, India, Nepal, Bhutan, China, Mongolia, Russia, Pakistan, Afghanistan, Kyrgyzstan, Kazakhstan, Tajikistan, and Uzbekistan.
  - India hosted the 4<sup>th</sup> Steering Committee of the GSLEP program in October 2019 in New Delhi which resulted in the **“New Delhi Statement”**.
- Snow Leopard is also in the list of 21 critically endangered species for the recovery programme of the Ministry of Environment Forest & Climate Change.

## FLASH FLOOD GUIDANCE SERVICES

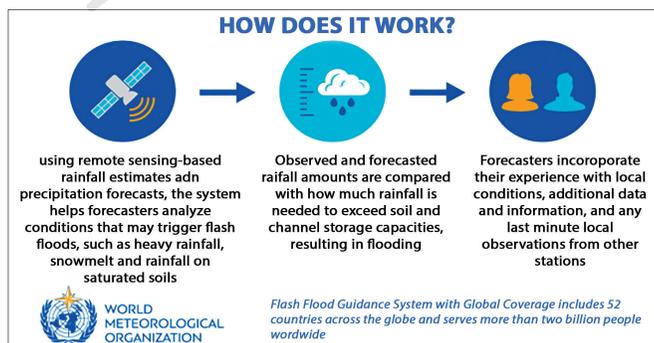
*The India Meteorological Department (IMD) has launched the South Asian Flash Flood Guidance System (FFGS).*

### About:

- India is leading a delegation of nations, including **Bhutan, Sri Lanka, Bangladesh, and Nepal**, in sharing **hydrological and meteorological data** towards preparing flash flood forecasts.
- India's National Disaster Management Authority and the Central Water Commission have also partnered in this system.

### What is Flash Flood Guidance Services?

- It is a **robust system** designed by the **India Meteorological Department (IMD)** to provide the necessary products in real-time to support the development of warnings for flash floods **about 6-12 hours** in advance at the watershed level for the flash flood-prone South Asian countries **viz. India, Nepal, Bhutan, Bangladesh, and Sri Lanka**.



- It will be established in **New Delhi**, where weather modeling and analysis of rainfall data observations from member countries will be done.
- It is aimed at helping disaster management teams and governments **make timely evacuation plans** ahead of the actual event of flooding.
- This will enable all the member countries to **issue impact-based forecasting** at the watershed and also city level, of very sudden floods and short duration.

### Why it is needed?

- The frequency of extreme rainfall events has increased due to climate change and South Asia is highly prone to flash floods.
- Flash floods are among the **world's deadliest natural disasters** which claimed 5,000 lives annually resulting in significant social, economic, and environmental impacts.
- Accounting for approximately 85% of the flooding cases, flash floods also have the highest mortality rate among different classes of flooding (e.g., riverine, coastal).

### What are Flash Floods?

- Flash Floods are highly localized events of **short duration** with a **very high peak** and usually have **less than six hours** between the occurrence of the rainfall and peak flood.
- The flood situation worsens in the presence of choked drainage lines or encroachments obstructing the natural flow of water.
- Flash floods have a different character than river floods, notably short time scales and occurring in small spatial scales, which make forecasting of flash floods quite a challenge than traditional flood forecasting approaches.

### HOW FLASH FLOODS OCCUR



### Recent Occurrences:

- In the latest incident **Hyderabad city** faced heavy rains due to flash floods resulting in inundated roads within few hours, even several water bodies reached the dangerous level.

- In the following days, **Sangli, Solapur, and Pune districts in Maharashtra** also faced similar intense rain and flooding that claimed over 30 lives and damaged standing Kharif crops.

### India Meteorological Department (IMD):

- The India Meteorological Department (IMD) was established in **1875**.
- It is an agency of the **Ministry of Earth Sciences** of the Government of India.
- It is the principal agency responsible for **meteorological observations, weather forecasting, and seismology**.

## NITROUS OXIDE POLLUTION

*According to Nature, human emissions of nitrous oxide (N<sub>2</sub>O) has increased by 30 percent between 1980 and 2016.*

### About:

- The research was conducted through an international collaboration between the **International Nitrogen Initiative (INI)** and the **Global Carbon Project of Future Earth**, a partner of the **World Climate Research Programme**.
- The study found that 43 percent of the total emissions came from human sources.

### Highlights of the report:

#### Increase in Nitrous Oxide Concentration:

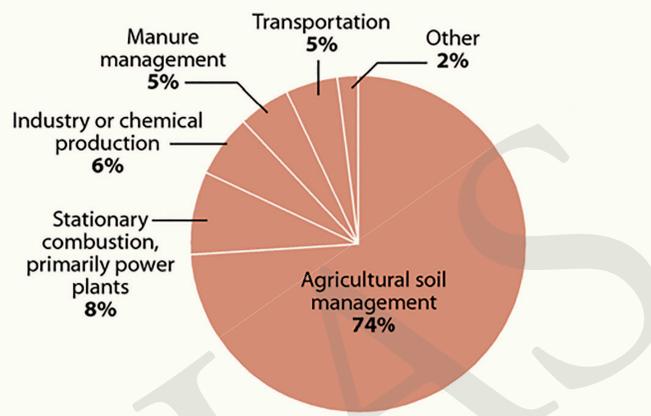
- It mentions that rising nitrous oxide emissions may negate current global attempts to keep temperatures from rising 1.5 degrees Celsius by the turn of the century and agriculture practices (increased use of nitrogen fertilizers) in India, Brazil, China, and the United States play a significant role in the rising level of nitrous oxide.
- Current emissions are taking **global temperature increases above 3 degrees Celsius**, twice the temperature target of the Paris accord.

#### Sources:

- The report shows that a substantial increase in global N<sub>2</sub>O emissions is primarily driven by **anthropogenic sources**, as natural sources remained relatively steady.
- Agricultural soils contributed to over 70% of N<sub>2</sub>O emissions** from India in 2010, **followed by wastewater (12%)**, and residential and commercial activities (6%).
- Since 2002, N<sub>2</sub>O has replaced **methane as the second-largest greenhouse gas** from Indian agriculture.
- Chemical fertilizers (over 82% of it is urea) account for over 77% of all agricultural N<sub>2</sub>O emissions in India, while manure, compost, and so on make up the rest.

## WHERE DOES N<sub>2</sub>O COME FROM?

Agriculture, particularly fertilized soil and animal waste, accounts for about three quarters of nitrous oxide emissions.



### Country-Wise Data:

- Emissions from synthetic fertilizer dominate the releases in China, India, and the U.S.
- Emissions from livestock manure as fertilizer dominate releases in Africa and South America.
- The significant increase in nitrous oxide was being driven by China, and it was only Europe, as a region, that had successfully tapered emissions.
- India has managed to slow nitrogen emissions growth since 2015 in part **due to the neem-coating of urea policy** that reduced atmospheric loss of the element as well as soil contamination.

### About Nitrous Oxide:

- It is a dangerous gas for the sustainable existence of humans on Earth.
- It has the third-highest concentration after CO<sub>2</sub> and methane in our atmosphere among greenhouse gases responsible for global warming.
- It can live in the atmosphere for up to 125 years.

### Why N<sub>2</sub>O Matters?

- N<sub>2</sub>O is also **the only remaining threat to the ozone layer**, for it accumulates in the atmosphere over a long period of time, just like CO<sub>2</sub>.
- This increase means that the **climatic burden on the atmosphere is increasing from non-carbon sources as well**, while the major focus of global climate change negotiations is currently centered on carbon.
- A major proportion of the N<sub>2</sub>O emissions in the last four decades came from the agricultural sector but this demand will keep on increasing for food and feed, thereby putting more pressure.

## VARIABILITY IN MASCARENE HIGH (MH)

*A new study on relationship between Mascarene High and Global Warming Hiatus has been conducted.*

### About:

- Sea surface temperature (SST) is the water temperature close to the ocean's surface.
- The exact meaning of surface varies according to the measurement method used, but it is between 1 millimetre (0.04 in) and 20 metres (70 ft) below the sea surface.
- Air masses in the Earth's atmosphere are highly modified by sea surface temperatures within a short distance of the shore.
- SST changes diurnally, like the air above it, but to a lesser degree, there is less SST variation on breezy days than on calm days.
- A new study on variability in the **Mascarene High (MH)** in the Southern Indian Ocean during the global warming hiatus (GWH) has revealed that the region experienced **significantly increased sea surface temperature (SST)** during this period (1998-2016).
- The warming in SST due to global warming has resulted in a **decrease in the pressure gradient between the MH and the Indian landmass.**

### What is Global Warming Hiatus?

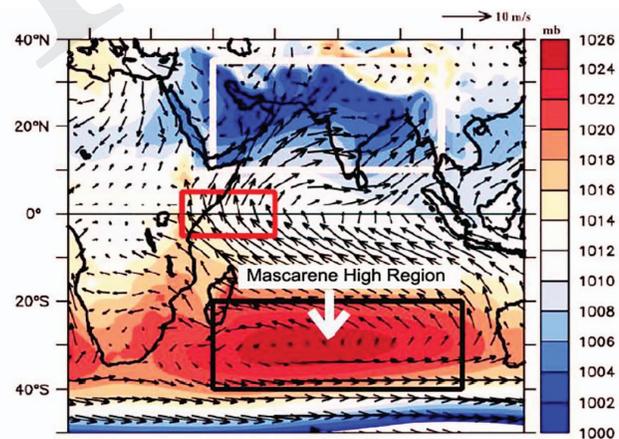
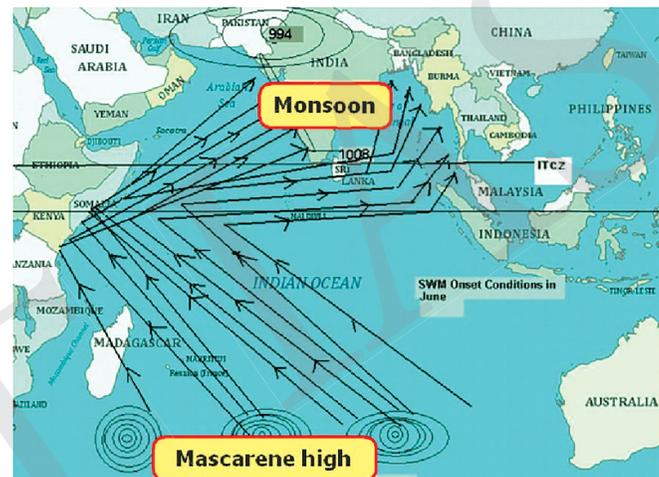
- A **global warming hiatus** is referred to as a global warming pause, or a global warming slowdown, which is a period of relatively little change in globally averaged surface temperatures.
- The hiatus, however, can increase the SST.

### Mascarene High (MH) and its Role:

- The Mascarene High (MH) is a semi-permanent subtropical high-pressure zone in the South Indian Ocean.
- It is also called the **Indian Ocean subtropical high**, which is a high-pressure area located between 20° to 35° South latitude and 40° to 90° East longitude. It is a region from where the cross-equatorial winds blow to India.
- It has been named after the Mascarene Islands, in the Indian Ocean east of Madagascar consisting of the islands belonging to Mauritius as well as the French Réunion Islands.
- Apart from its large influence on African and Australian weather patterns, it also helps in driving the inter-hemispheric circulation between the Indian Ocean in the south and subcontinental landmass in the north.
- This in turn suppressed the intensity of low-level cross-equatorial winds over the western Indian Ocean affecting the onset of the monsoon over the Indian subcontinent and rainfall over East Asia.

### Impacts:

- The southwest monsoon caused by this high pressure area is the strongest component of the Indian subcontinent monsoon that contributes about more than 80 per cent of the annual rainfall in entire East Asia.
- The weakening of the MH in the southern Indian Ocean during GWH may affect the strength of the upwelling along the coast of Somalia and Oman and thus, influence the Arabian Sea ecosystem.



The anticyclonic circulation in the MH and its associated cross-equatorial winds in the western Indian Ocean, transport moisture from the Southern Indian Ocean to South Asia, establishing a relationship between the Mascarene High (MH) and the Indian monsoon trough. This, in turn, affects the onset of the monsoon over the Indian subcontinent and rainfall over the east Asia.

## EARTHSHOT PRIZE

*Britain's Prince William has launched a new 50-million-pound Earth shot Prize.*

### About:

- The prize is aimed at funding the most innovative solutions to some of the world's most pressing environmental challenges.

- The Earth shot Prize is centered around **five “Earthshots”**, the ambitious goals for the planet, which if achieved by 2030 will improve life for all, for generations to come.
- It is the most prestigious global prize for the environment in history.
- **The Five Earthshots:**
  - ♦ Protect and restore nature.
  - ♦ Clean our air
  - ♦ Revive our oceans
  - ♦ Build a waste-free world
  - ♦ Fix our climate.
- **Awards Ceremony:** It will take place in different cities across the world each year between 2021 and 2030, at which the five winners for each of the Earth shots will be selected from 15 finalists.
- The first awards ceremony will take place in London in autumn of 2021.
- **Benefits to Winners:** After the awards, each winner will receive a global platform and prestigious profile, with their stories being showcased over the decade.

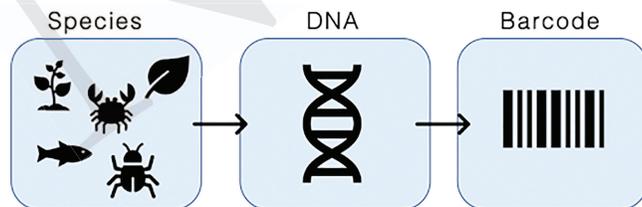
- It has overseen the completion of one major program, **BARCODE 500K**, and a second program, **BIOSCAN**, is now underway.
  - ♦ The first program **barcoded the DNA of 500,000** species in 25 nations.
  - ♦ Building on this success, **BIOSCAN** will extend barcode coverage to **2.5 million** species by **2026**.
  - ♦ This program will stimulate the activation of the **Planetary Biodiversity Mission (PBM)** – iBOL’s final project.
  - ♦ PBM is a research initiative that will deliver a **comprehensive understanding of multicellular life by 2045**.
  - ♦ iBOL is working to establish an earth observation system that will reveal species, including their dynamics and interactions.

**INTERNATIONAL BARCODE OF LIFE (IBOL)**

*The Zoological Survey of India and International Barcode of Life are collaborating for DNA Barcoding.*

**About:**

- **ZSI and iBOL** have come together for further efforts in **DNA barcoding** which is a methodology for **rapidly and accurately** identifying species by sequencing a short segment of standardized **gene regions** and **comparing individual sequences** to a reference database.
- The MoU will enable ZSI to participate at the **Global level programs** like **Bioscan and Planetary Biodiversity Mission**.



**International Barcode of Life (iBOL):**

- It is a **Canadian** not-for-profit corporation **established in 2008**.
- It is a research alliance that involves nations with the desire to **transform biodiversity** science by building the **DNA barcode reference libraries**, the **sequencing facilities**, the **informatics platforms**, the **analytical protocols**, and the international collaboration required to inventory and assess biodiversity.

**CHINA’S CLIMATE COMMITMENT**

*China will be carbon net-zero by 2060 and have CO<sub>2</sub> peak emissions before 2030.*

**About:**

- The Chinese President announced that China would not allow its greenhouse gas emissions to grow beyond 2030 and will achieve carbon neutrality by 2060.

**What are Net-Zero Target and its Relevance?**

- For few years, there has been a concerted campaign to get countries, especially the big emitters, to commit themselves to achieve “**climate neutrality**” by **2050**.
- This is sometimes referred to as the state of **net-zero emissions** that would require countries to significantly reduce their **emissions** while increasing **land or forest sinks** that would **absorb** the emissions that do take place.
- **Net-zero** is a state in which a **country’s emissions** are compensated by **absorptions** and the **removal of greenhouse gases** from the atmosphere.
- Scientists and climate change campaign groups say **global carbon neutrality** by **2050** is the only way to achieve the **Paris Agreement** target of keeping global temperatures from rising beyond 2°C compared to pre-industrial times.
- At the current rate of emissions, the world is headed for a 3° to 4°C rises in temperatures by 2100.

**Significance of China’s Commitment:**

- China is the **world’s largest** emitter of greenhouse gases accounting for almost **30% of global emissions**, more than the combined emissions in the **United States, the European Union, and India**, the three next biggest emitters.

- China's commitment to a **net-zero target** is a big breakthrough, especially since countries have been reluctant to pledge themselves to such long term commitments.
- According to Climate Action Tracker, the Chinese goal, if realized, would lower global warming projections for **2100 by about 0.2° to 0.3°C**, the most impactful single action ever taken by any country.

### Implications on India:

- The Chinese announcement is naturally expected to **increase pressure on India to follow suit**.
- India is the only G20 country whose actions are on track to meet the **2° goal**.
- Another side-effect of the **Chinese decision** could be an increased divergence in the positions of **India and China** at the climate negotiations.
- China might now have fewer grounds to align itself with India as a developing country.

### What is India's Commitment?

- India has resisted pressure to make a long-term commitment, citing the fact that developed countries had utterly failed in keeping their past promises, and never delivered on the commitments they made earlier.
- The climate change actions taken by India are far more robust than those of the developed countries.

### What is Paris Deal of 2015?

- It is an international agreement to **combat climate change and to reduce**, mitigate greenhouse gas emissions.
- Paris Agreement under United Nations Framework on Climate Change, replaced an earlier agreement to deal with climate change, the Kyoto Protocol.
- In the Paris agreement, there is no difference between developing and developed countries. In the Kyoto Protocol, there was a differentiation between developed and developing countries by clubbing them as Annex 1 countries and non-Annex 1 countries.
- **Aims:** Keep the global temperature rise this century well below 2 degrees Celsius above the pre-industrial level.
- Pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.
- Strengthen the ability of countries to deal with the impacts of climate change.

## 7<sup>th</sup> OCTOBER: WORLD COTTON DAY

*Union Textile Minister of India has launched the 1<sup>st</sup> ever brand & logo for Indian Cotton on World's Cotton Day.*

### About:

- India's premium Cotton would be known as '**Kasturi Cotton**' in the world cotton trade from now onwards.
- The Kasturi Cotton brand will represent **whiteness, brightness, softness, purity, luster, uniqueness, and Indianness**.



### World Cotton Day:

- The World Cotton day is celebrated on 7 October annually to recognize the importance of **cotton as a global commodity**.
- The World Trade Organization designated 7th October 2019 as **World Cotton Day** at the initiative of the **Cotton-4 (Benin, Burkina Faso, Chad, and Mali)**.
- The event is organized in collaboration with the Secretariats of the **United Nations Food and Agriculture Organization (FAO)**, the **United Nations Conference on Trade and Development (UNCTAD)**, the **International Trade Centre (ITC)**, and the **International Cotton Advisory Committee (ICAC)**.

### Facts about Cotton

- Cotton is a kharif crop which requires 6 to 8 months to mature. Its time of sowing and harvesting differs in different parts of the country depending upon the climatic conditions.
- Cotton is the crop of **tropical and sub-tropical** areas and requires uniformly high temperature varying between 21°C and 30°C. The growth of cotton is retarded when the temperature falls below 20°C.
- Cotton is a drought-resistant crop ideal for arid climates and requires an average annual rainfall of 50- 100 cm.
- It requires **at least 210 frost free days** in a year.
- It occupies just 2.1 % of the world's arable land, yet it meets 27% of the world's textiles need. Food products are also derived from cotton like edible oil and animal feed from the seed.
- India is the second largest producer of cotton in the world after China.

## HYDROGEN COMPRESSED NATURAL GAS (H-CNG)

*The Ministry of Road Transport and Highways has allowed the use of H-CNG (18% mix of hydrogen) in CNG engines.*

### About:

- The Ministry has been notifying various alternate fuels under Clean Fuels for transportation.

- A notification for amendments to the Central Motor Vehicles Rules 1989, for the inclusion of H-CNG as an automotive fuel has been introduced.

**What is Hydrogen Compressed Natural Gas (H-CNG)?**

- The blending of hydrogen with CNG provides a blended gas termed as HCNG. It stands for **hydrogen-enriched compressed natural gas** and it combines the advantages of **both hydrogen and methane**.
- It is a **mixture of compressed natural gas and 4-9 percent hydrogen by energy**.
- It can be used as a fuel in an internal combustion engine and also for home appliances.
- Hydrogen is an **excellent additive to improve the combustion of hydrocarbon fuel** due to its low ignition energy, high reactivity, diffusivity, and burning velocity.

**Benefits of Switching to Hydrogen Compressed Natural Gas (H-CNG):**

- HCNG **reduces hydrocarbon emissions** by up to 70%.
- It enables up to 5 % **savings in fuel**.
- It is regarded as the first step towards the **future Hydrogen economy**.
- Engines can be calibrated to **release lower amounts of Nitrogen Oxides**.
- Engines **need minimum modification** to run on HCNG.
- Can act as future secondary fuels for power systems.

- The ideal fuel for high load applications and heavy-duty vehicles.
- **Better performance** due to higher Octane rating of H2.

**Concerns:**

- The physical blending of CNG and hydrogen involves a series of **energy-intensive steps** that would make H-CNG more **expensive than CNG**.
- The cars and autos would not be able to use H-CNG with the prevailing technology because **hydrogen is "highly volatile" and there is a possibility of a rise in combustion temperature and risk**.
- Need a change in the **structural aspects of the engine** and the creation of **new infrastructure for preparing HCNG**.
- Determining the **most optimized Hydrogen to Natural Gas ratio**.

**FRIDAY FOR FUTURE**

*The students have under the banner of Fridays For Future (FFF) protested outside the Environment ministry.*

**About:**

- They are demanding scrapping of Draft Environment Impact Assessment, 2020 and that the government must act against the climate crisis.

**Friday for Future Movement:**

- FFF is a dynamic global student movement pushing for immediate action on climate change through active campaigning and advocacy.
- The movement was inspired by Swedish teenager **Greta Thunberg**, who was recently **awarded the Right Livelihood Award-2019, also known as Sweden's alternative Nobel Prize**.
- The FFF movement was chosen **as Champion of the Earth award** for inspiration and action because of its role in highlighting the devastating effects of climate change.
- **Goals:** The main goal of the movement is to put moral pressure on policy-makers, to make them listen to scientists, and then to take action to limit global warming.
- **Demand:**
  - ♦ Keep the global temperature rise below 1.5°C compared to pre-industrial levels (Key outcome of Paris climate deal).
  - ♦ Ensure climate justice and equity.
- **Demand for Delhi:** The demand for Delhi includes saving the Aravallis, improved sewage management plants to prevent pollution of the Yamuna, public participation in policy-making, and better environmental education in schools.

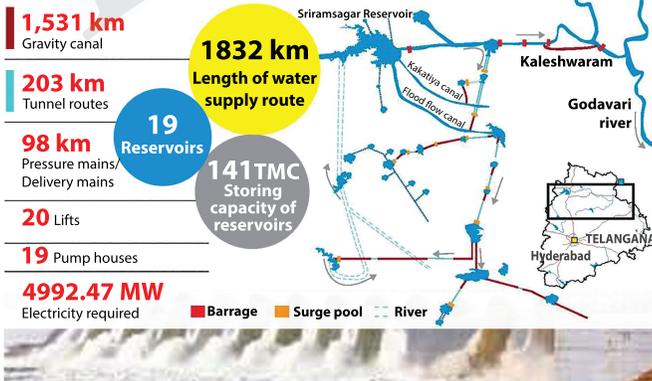
## KALESHWARAM DAM ECO CLEARANCE VIOLATES LAW

*The National Green Tribunal has declared environmental clearance given to Kaleshwaram Project as ex post facto and illegal.*

### About the issues in the Project:

- The petition filed in 2018 stated that while the Kaleshwaram Project was a lift irrigation system, the state government wrongly claimed, until the grant of environmental clearance (EC), that the project was for drinking water only not for lift irrigation.
- Substantial work is already done before getting EC in 2017. This violated the Environmental Impact Assessment (EIA) Notification, 2006.
- Then Ministry of Environment, Forest and Climate Change (MoEFCC) had published the new draft of the Environmental Impact Assessment (EIA) notification 2020, to replace the existing EIA Notification 2006 under the Environment (Protection) Act, 1986.
- The draft notification has provisions for post facto project clearance.
- The Project was also changed by an increase in capacity and inclusion of **Mission Bhagiratha** to provide drinking water to Hyderabad and certain villages of Telangana.
- However, the pre-feasibility report submitted did not mention the Mission Bhagiratha.
- The feasibility of the changed project was never evaluated while granting EC.
- The project contractor L&T was alleged to have cleared large areas of forest land for the construction of quarters for its employees, without requisite forest clearance under the Forest (Conservation) Act, 1980.

### KALESHWARAM, INDIA'S LARGEST MULTI-STAGE LIFT IRRIGATION PROJECT



### Kaleshwaram Lift Irrigation Project:

- Originally called the **Pranahita-Chevella** project in erstwhile Andhra Pradesh, it was redesigned, extended, and renamed as Kaleshwaram project in Telangana in 2014.
- It is aimed to make **Telangana drought-proof** by harnessing the floodwaters of the **Godavari**.
- The project is an under-construction multi-purpose irrigation project on the Godavari River in Kaleshwaram, Bhoopalpally, Telangana.
- The project starts at the confluence point of Pranahita River and Godavari River.

### Why is it significant?

- It will facilitate agriculture, rejuvenate tanks, provide water for industries, and supply drinking water to Hyderabad and Secunderabad by creating a series of storage tanks and a network of pipelines.
- The project will also **support Mission Kakatiya and Mission Bhagiratha schemes** designed to provide drinking water to many villages and improve the capacities of tanks.
- When completed, it will be the world's largest irrigation and drinking water system.

### Mission Bhagiratha:

- It is a project for safe drinking water for every village and city household in **Telangana State**.
- It aims to provide **pipd water** to 2.32 crore people in 20 lakh households in urban and 60 lakhs in rural areas of Telangana.

### Godavari River

- The Godavari is India's second-longest river after the Ganga.
- It rises from Trimbakeshwar, Maharashtra.
- It flows east for 1,465 kilometers, draining the states of Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh, Odisha, and Karnataka, ultimately emptying into the Bay of Bengal through its extensive network of tributaries.
- The major tributaries of the river are classified as the left bank tributaries which include the Purna, Pranahita, Indravati, and Sabari river and the right bank tributaries are Pravara, Manjira, Manair.
- Kumbh Mela is held at Nasik (on the Godavari), Prayagraj (at the confluence of Ganga, Yamuna, and the mythical Saraswati), Haridwar (on the Ganges), Ujjain (on the Shipra) every four years by rotation.
- Sadarmatt Anicut across river Godavari is one of the two irrigation projects in the International Commission on Irrigation and Drainage (ICID) Register of Heritage Irrigation Structures.

## THALASSEMIA BAL SEWA YOJNA

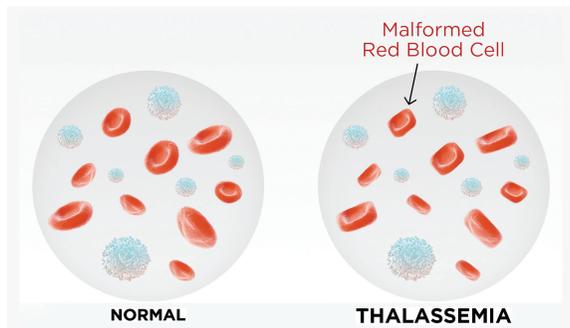
*Union Minister for Health and Family Welfare launched the second phase of "Thalassemia Bal Sewa Yojna".*

### About:

- It is a **Coal India CSR funded Hematopoietic Stem Cell Transplantation (HSCT) program** which was launched in 2017 and aims to provide a **one-time cure opportunity** for Haemoglobinopathies like **Thalassaemia and Sickle Cell Disease** for patients who have a matched family donor.
- It will be extended for the **next two years from 2020**.
- The initiative was targeted to provide financial assistance to a total of 200 patients by providing a package cost not exceeding **Rs. 10 lakhs** per HSCT.
- HSCT** refers to the transplantation of stem cells from various sources (bone marrow, growth factor-stimulated peripheral blood, and umbilical cord blood) for the treatment of various diseases like autoimmune, and genetic diseases.

### What is Thalassaemia?

- It is a **genetic (inherited) blood disorder**. In this disorder, there is less oxygen-carrying protein i.e. hemoglobin, and fewer red blood cells in the body than normal.
- When there is a lack of hemoglobin, the red blood cells don't function properly and they last for a shorter period of time which results in fewer healthy red blood cells in the body.
- Its symptoms include fatigue, weakness, paleness, and slow growth.
- Its mild forms may not need treatment but in severe cases, blood transfusions or a donor stem-cell transplant is required for treatment.
- There are **two major types of thalassemia: alpha and beta**. They have been named after the genetic effects in the (alpha and beta) protein chains.



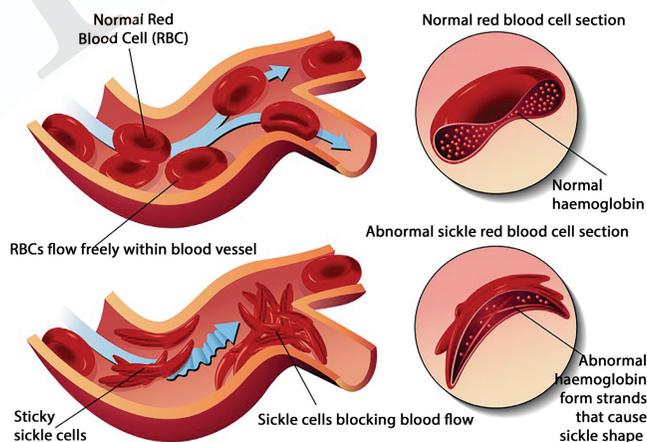
## The Burden of Thalassemia in India:

- It is estimated 10,000 to 12,000 children are born with thalassemia every year in India.
- Data on the prevalence of silent carriers for various Haemoglobinopathies show that silent carriers are 2.9-4.6% for Thalassemia, while it can be as high as 40% for sickle cell anemia especially among the tribal population.

### Sickle Cell Disease

- It is an inherited disease caused by defects in the **beta-globin gene that helps make hemoglobin**.
- The red blood cells become hard and sticky and look like a **C-shaped farm tool called a "sickle"**.
- The sickle cells die early, which causes a constant shortage of red blood cells.
- World Sickle Cell Day 2020** was observed on June 19 every year to increase awareness about Sickle Cell Disease (SCD) at the national level.

### Sickle-Cell Anemia



### Corporate Social Responsibility

- India is one of the first countries in the world to make Corporate Social Responsibility (CSR) mandatory for companies following an amendment to the Companies Act, 2013 (Companies Act) in 2014.
- Section 135(1) of the Companies Act** prescribes thresholds to identify companies which are required to constitute a CSR Committee - those, in the immediately preceding financial year of which:
  - net worth is Rs 500 Crore or more; or
  - turnover is Rs 1000 Crore or more; or
  - net profit amounts to Rs 500 Crore or more.

- Such companies are required every year to **spend at least 2% of their average profit for the previous three years on CSR activities.**
- There is a provision for penalty in the form of fine on the company and officers in default.

#### How the amount should be spent under CSR?

- Amounts to be utilised towards a CSR activity, but **unspent must be parked in a special account as prescribed under the provision within 30 days of the end of the relevant financial year.**
- The unspent amount must be utilised by the company for the particular CSR activity within a period of 3 financial years from the date of such transfer, failing which, it must be transferred to any fund provided for in schedule VII of the Companies Act namely inter alia the Clean Ganga Fund, Swachh Baharat Kosh, Prime Minister's National Relief Fund.
- Any unspent amount which does not relate to an ongoing CSR activity must be transferred to a fund provided for in Schedule VII within a span of 6 months of the end of the relevant financial year.

## CBD OIL

*Recently, the controversy about the use of Cannabidiol (CBD) in Bollywood stigmatized its usage.*

#### About:

- Cannabidiol (CBD) is a **chemical** present in the **cannabis plant**, which is also known as **marijuana or Cannabis sativa.**
- CBD oil is made by extracting CBD from the cannabis plant by **diluting** it with a carrier oil like **coconut or hemp seed oil.**
- It contains less than 0.3 percent THC (the compound that gets users 'high')** therefore, a person does not get 'high' when he/she consumes them.

#### Effects of Cannabidiol:

- Cannabidiol has effects on the **brain, preventing** the breakdown of a chemical that aggravates the **pain and affects mood, and mental function.**
- It also **reduces psychotic symptoms** associated with conditions such as schizophrenia, epilepsy, chronic headaches, anxiety, depression, drug addiction, and other neurological conditions.
- CBD and Cancer:** There is not enough evidence to prove that CBD oil can safely and effectively **treat cancer.**
  - CBD inhibits **inflammatory and neuropathic pain associated with cancer.**

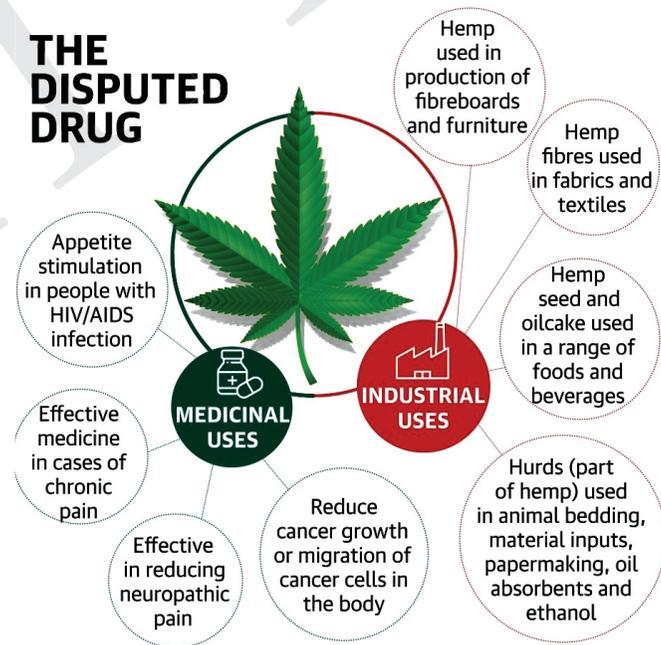
#### Legal Provisions in the context of india:

- The **Narcotic Drugs and Psychotropic Substances Act, 1985 (NDPS Act)** outlaws the recreational use of cannabis.
- The NDPS Act, however, does not apply to the **leaves and seeds** of cannabis plants.
- In case the CBD is extracted from the **leaves of the cannabis**, then technically it is not **illegal.**
- CBD oil manufactured under a license issued by the **Drugs and Cosmetics Act, 1940** can be legally used.
- However, the use of cannabis as a medicine is not much prevalent in India.

#### What is the difference between CBD and Other Drugs Containing THC?

- Drugs used for recreational use have a high quantity of **THC (Tetrahydrocannabinol).**
- CBD only stimulates our body cells to generate health response, unlike other recreational drugs that directly bind with specific receptors located on body cells to generate their effects.
- Presently, there are no case reports of dependence or abuse.

## THE DISPUTED DRUG



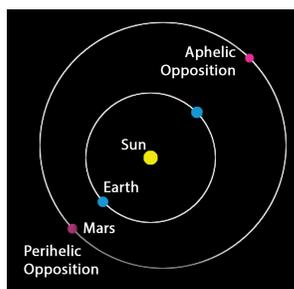
## MARS OPPOSITION

*Mars will look much brighter and bigger than usual in October 2020 due to an event called "opposition".*

#### About:

- In this event, **Mars will outshine Jupiter**, becoming the third brightest object (moon and Venus are first and second, respectively) in the night sky.

- Mars opposition is the event when the sun, Earth, and an outer planet (Mars in this case) are lined up, with the Earth in the middle.
- The time of opposition is the point when the outer planet is typically also at its closest distance to the Earth for a given year, and because it is close, the planet appears brighter in the sky.
- An opposition can occur along Mars' orbit, but when it happens when the planet is also closest to the sun, it is also particularly close to the Earth.



### Why is it called Opposition?

- As per NASA, from an individual's perspective on the Earth, Mars rises in the east and after staying up all night, it sets in the west just as the sun rises in the east and sets in the west.
- From the perspective on Earth, the sun and Mars appear to be on the opposite sides of the sky, Mars is said to be in "opposition" and essentially, the opposition is a reference to "opposing the sun" in the sky.

### When does it happen?

- The opposition can happen only for planets that are farther away from the sun than the Earth. In the case of Mars, roughly every two years, the Earth passes between the sun and Mars, this is when the three are arranged in a straight line.
- In case of opposition, Mars and the Sun are on directly opposite sides of the Earth i.e. the Earth, sun, and Mars all lie in a straight line, with the Earth in the middle.

## XOO INFECTION IN RICE

*Scientists from the Centre for Plant Molecular Biology (CPMB) uncovered how Xoo bacteria interacts with rice plants and causes disease.*

### About:

- The research group is working to **identify** and **develop** a few molecules which are derived from either the **Xoo bacterium** or from the **infected rice cell walls**.
- The team is developing new disease control strategies that they can use as **vaccines that activate the rice immune system** and provide resistance to rice plants from infections by pathogens.
- **Significance of the study:** This study will reveal rice defense responses which may lead to new **ways of reducing yield losses for a crop**.

- **Impact on Other Crops:** In addition to rice, Xoo may infect other plants, such as **rice cut-grass (Leersia oryzoides)**, **Chinese sprangletop (Leptochloa Chinensis)**, and common grasses and weeds.

### Xoo Infection:

- *Xanthomonas oryzae* pv *oryzae* or commonly known as **Xoo infection**.
- Xoo infection causes **huge yield losses** to rice cultivation throughout the world.
- It causes a serious **bacterial leaf blight disease** in rice. It is also known as **Bacterial blight**.
- Xoo is a gram-negative bacteria.



### DO YOU KNOW?

- Gram-negative bacteria cause infections including pneumonia, bloodstream infections, wound or surgical site infections, and meningitis.
- Gram-negative bacteria are becoming increasingly resistant to most available antibiotics.
- These bacteria have built-in abilities to find new ways to be resistant and can pass along genetic materials that allow other bacteria to become drug-resistant as well.
- Some Gram-negative bacteria are *Klebsiella*, *Acinetobacter*, *Pseudomonas aeruginosa*, and *E. coli*, etc.

### Transmission:

- Xoo infection initiates from the **leaf sheath** and eventually spreads to **mature leaves** through the **water flow** under **optimum temperature** and **high humidity conditions (Vascular disease)**.
- Since rice paddies are flooded throughout most of the growing season, Xoo may easily spread **through the water** from infected plants.
- Wind may also help spread the **Xoo bacteria** to other **crops and rice paddies**.

### Prevention:

- The most common method of defending against rice bacterial blight is the cultivation of **rice varieties with genes** that confer resistance to **Xoo infection**.
- Over 30 resistance genes, **termed Xa1 to Xa33**, have been identified in rice plants.
- However, this method involves breeding or gene manipulation techniques that are **laborious and time-consuming**.
- Furthermore, the introduction of "**R**" genes provide only **race-specific resistance** that will prevent **infections** by only specific strains of Xoo.

- Therefore, there is a need to develop a molecule that offers **broad-spectrum resistance**, which will be effective not only against Xoo but also against other pathogens.

#### Centre for Plant Molecular Biology

- CPMB is one of the **7 Centers of Excellence** created in the country with initial financial assistance from the **Department of Biotechnology**, Government of India.
- Currently, it is one of the leading Centers of the country in Plant Molecular Biology (the study of the molecular basis of plant life).

## HOLOGRAPHIC IMAGING FOR DETECTING VIRUSES

*Scientists have developed a method using holographic imaging to detect both viruses and antibodies.*

#### About:

- The method used has been described in the journal 'Soft Matter'.
- The method **uses laser beams to record holograms of their test beads**.
- **Working:** The surfaces of the beads are activated with **biochemical binding sites** that attract either antibodies or virus particles, depending on the intended test.
- The Binding antibodies or viruses cause the beads to grow by a few billionth parts of a meter.
- The test can analyze a dozen beads per second and this may help in cutting the time for a reliable thousand-bead diagnostic test to 20 minutes.
- The holographic video microscopy is performed by an instrument, xSight, created by Spheryx.

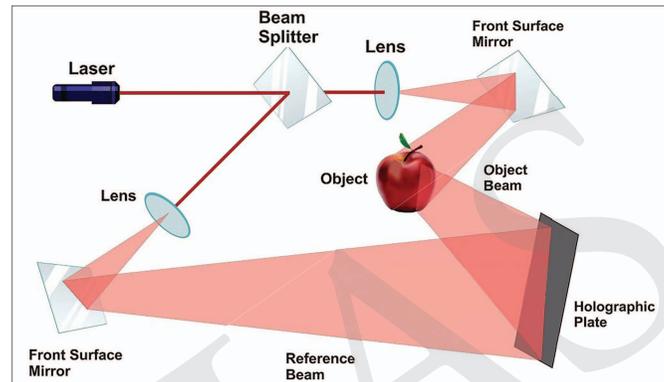
#### Significance:

- The test takes less time to complete, it could be done in under 30 minutes.
- It is much accurate and efficient.
- It can be performed by minimally trained personnel.
- Overall, reducing the risk of misdiagnosis, and cutting the cost of healthcare.

#### About Holographic Imaging:

- **Hologram:** A hologram is a physical structure that diffracts light into an image. The term 'hologram' can refer to both the encoded material and the resulting image.
- A holographic image can be seen by looking into an illuminated holographic print or by shining a laser through a hologram and projecting the image onto a screen.

- The **Hungarian-British physicist Dennis Gabor** was awarded the **Nobel Prize in Physics in 1971** "for his invention and development of the holographic method".
- **Applications:** Military mapping, Art, medical, research, etc.



#### What are Antibodies?

- They are also called **immunoglobulin**. It is a **Y-shaped protective protein** produced by the immune system in response to the **presence of a foreign substance, called an antigen**.
- When antibodies find their target, they bind to it, which then triggers a cascade of actions that vanquish the invader.
- Antibodies are part of the "adaptive" immune system.

## ASAFOETIDA (HING) CULTIVATION IN INDIA

*Scientist from CSIR have planted hing saplings in Lahaul valley of Himachal Pradesh.*

#### About:

- Ferula asafoetida is a **herbaceous plant of the Umbelliferae family** and it stores most of its nutrients deep inside its fleshy roots.
- It is a **perennial plant** whose **oleo gum resin is extracted** from its thick roots and rhizome.
- It **thrives in dry and cold desert conditions** and can withstand a maximum temperature between 35 and 40 degrees, whereas, during winters, it can survive in temperatures up to minus 4 degrees.
- During extreme weather, the plant can get dormant.
- It is **endemic to Iran and Afghanistan** and they are the prominent global suppliers.

#### Indian Scenario:

- Asafoetida (Hing) is **not cultivated in India**.
- India imports about 1,200 tonnes of raw heeng worth Rs 600 crore from Iran, Afghanistan, and Uzbekistan.

- **Hing has many traditional medicinal uses** in India. It is believed to help with everything from kidney stones to bronchitis. It is a common spice used in the Indian kitchen and is believed to help prevent gastrointestinal ailments.
- It is also used to help with **painful or excessive bleeding during menstruation** and premature labor also it is anti-flatulent, the herb is fed to new mothers.

#### Cultivation in India:

- Regions with sandy soil, very little moisture, and an annual rainfall of not more than 200mm are considered **conducive for hing cultivation in India**. Some initial experiments were conducted in high altitude districts of Mandi, Kinnaur, Kullu, Manali, and Palampur in Himachal Pradesh.

## WORLD OSTEOPOROSIS DAY

*World Osteoporosis Day (WOD) was celebrated on October 20.*

#### About:

- It aims to make **osteoporosis** and **fracture prevention** a global health priority.
- The campaign is also started named **"THAT'S OSTEOPOROSIS"** to raise awareness.



#### What is Osteoporosis?

- It is a **skeletal disease** that occurs because of **weakening and loss of architecture** of the **bones**.
- Osteoporosis is also hereditary.
- Osteoporosis causes bones to become weak and fragile so that they break easily – even as a result of a minor fall, a bump, a sneeze, or a sudden movement.

- Fractures caused by osteoporosis can be life-threatening and a major cause of pain and long-term disability.
- Common sites of osteoporotic fractures are the wrists, spine, and hip bone in elderly women.

#### Prevention and Treatment:

- Women need to establish an exercise program that includes **weight-bearing exercises** (where your muscles work against gravity) like **walking, jogging, dancing**, etc.
- Adequate **sunlight exposure** and **consumption** of foods rich in **calcium like dairy products, fish, green leafy vegetables**, nuts, etc are helpful.
- Limiting the consumption of alcohol and avoiding smoking can also prove to be beneficial.
- There are several medications available.

## NASA'S OSIRIS-REX

*Recently, NASA's OSIRIS-REx spacecraft briefly touched asteroid Benu.*

#### About:

- The spacecraft's robotic arm called the **Touch-And-Go Sample Acquisition Mechanism (TAGSAM)** attempted to "TAG" the asteroid at a sample site which was no bigger than a few parking spaces and collected a sample.
- The spacecraft is on a mission to collect samples of dust and pebbles from the surface of the asteroid and deliver them back to Earth in 2023.

#### About Asteroid Benu:

- It is a **primitive asteroid** which means it hasn't undergone drastic changes since its formation over the age of 4 billion years ago and hence it **contains chemicals and rocks dating back to the birth of the solar system** and its proximity to allows humanity to study.
- Due to its size, it rotates slowly enough to ensure that the **regolith stays on its surface**.
- **Origin of Life:** It is **very rich in carbon content** meaning it may contain organic molecules and owing to the Benu's age, it is likely to contain material that contains molecules that were present when life first formed on Earth, where life forms are based on carbon atom chains.
- Evidences of **carbonate minerals were found in some of the asteroid's geological features**, which typically form in environments that include both hot water and carbon dioxide. That suggests that the larger body that Benu was once part of possessed hot springs or some other sort of extensive hydrothermal system.

**About OSIRIS-REx:**

- It is **NASA's first sample return mission** which aims to bring back samples from the asteroid BENNU
- It was launched in 2016, it reached its target in 2018 and since then, the spacecraft has been trying to match the velocity of the asteroid using small rocket thrusters.

**What is an Asteroid?**

- Asteroids are rocky objects that orbit the Sun, much smaller than planets and they are sometimes also called **minor planets**.
- Asteroids are divided into three classes.
  - ◆ First includes those found in the main asteroid **belt between Mars and Jupiter**.
  - ◆ The second **includes trojans**, which are asteroids that share an orbit with a larger planet.
  - ◆ The third includes **Near-Earth Asteroids (NEA)**, which have orbits that pass close by the Earth. Those that cross the Earth's orbit are called Earth-crossers.

**NASA's New Frontiers Program**

- It is a series of **space exploration missions by NASA** which aims for the research and study of several of the Solar System bodies, including the dwarf planet Pluto.
- It explores the solar system with medium-class spacecraft missions. It has four components
  - ◆ **New Horizons Mission:** It is the first scientific investigation to obtain a close look at **Pluto and its moons**. New Horizons is now venturing deeper into the distant, mysterious **Kuiper Belt**, a relic of solar system formation.
  - ◆ **Juno:** It is aimed to study **Jupiter and its gravitational and magnetic fields**, vast magnetosphere, intense aurora, and the swirling clouds that form Jupiter's colorful, trademark atmosphere.
  - ◆ **OSIRIS-REx:** It is the first mission of the US to retrieve **a sample of an asteroid** and carry it to Earth for further study.
  - ◆ **Dragonfly:** It is a unique spacecraft that will **visit Saturn's** richly organic moon, Titan. It is slated for a 2026 launch and a 2034 arrival.

**Some Future Asteroid Missions of NASA**

- **DART or The Double Asteroid Redirection Test mission:** It will be the first test of technology that could be used to divert an asteroid that is discovered to be on a collision course with Earth.
- **Lucy:** It is scheduled to launch next year. It will fly past a series of objects known as the **Trojan asteroids**, which are gravitationally trapped in Jupiter's orbit.
- **Psyche:** It is a spacecraft that will visit an asteroid in the belt between Mars and Jupiter named Psyche.

**FELUDA TEST FOR COVID-19**

*The Union Health Ministry will soon roll out the FELUDA paper strip test for the SARS-CoV-2 diagnosis.*

**About:**

- The test was named **Feluda** after a **fictional detective character** created by Satyajit Ray.
- FELUDA, an acronym for the **FNCAS9 Editor-Limited Uniform Detection Assay** which uses an **indigenously developed, cutting-edge CRISPR technology** for detection of the genomic sequence of SARS-CoV-2 virus.
- It has been developed by **CSIR-IGIB** and has been approved by the **Drug Controller General of India** for a **commercial launch**.

**Features:**

- The test is based on a bacterial **immune system** protein called **Cas9**.
- It can deliver a result in **45 minutes**.
- The technology can detect specific sequences of DNA within a **gene**, and uses an enzyme functioning as molecular scissors to snip it.
- Similar to a pregnancy strip test, Feluda changes color if the virus is detected and doesn't need expensive machines for detection.
- This technology is not limited to COVID-19 and can work on any DNA-RNA or single mutations, disease mutations, etc.

**AFFORDABLE & RAPID COVID-19 TEST KITS**

CSIR IGIB Develops Paper-based COVID-19 Testing Kit **FELUDA**



Indigenously developed **paper-based testing kit** to provide instant result

**Advantages include affordability, ease of use & non-dependency on Q-PCR machines**

Expected to cost around **₹500** against the RT-PCR test that costs ₹4,500 in private labs

**Cutting edge technology**, can also work on any DNA-RNA, disease mutations etc

**Significance:**

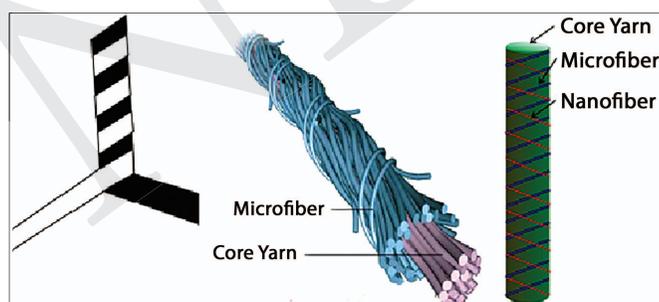
- The paper-based strip will help in **extensive testing** in the country.
- Since it is a **visual test**, there is no need for complicated training, unlike the current RT-PCR test.
- It also takes less time compared to the RT-PCR test.
- It is cost effective too.
- It can be done rapidly and can be used in any basic **community health center**.
- Based on tests in over 2,000 patients during trials, the test showed **96% sensitivity** and **98% specificity**.

**NANOFIBER YARNS**

*IIT Madras has developed a prototype of suture thread made of nanofiber yarns.*

**About:**

- These yarns are **bio-absorbable** and can deliver a higher load of antibiotics and/or therapeutics at the site itself.
- It has been developed by the **Stem Cell and Molecular Biology laboratory, Department of Biotechnology, IIT Madras**.
- The suture material uses **nanofibers woven as yarn** using certain specific techniques, and the strength can be varied depending on the target tissue (skin, muscle, cartilage), explains Rama S. Verma. Each strand of the thread has **good tensile strength**, besides degrading rapidly and mimics the **collagen fibrils of body tissues**.
- The team also loaded the **fibers to deliver drugs at the site**. This might be more suitable for internal sutures and soft tissues. The **bio absorbability** aspect makes sure that the sutures do not have to be removed.

**Nanofibers:**

- Nanofiber yarns are **thread-like structures formed by twisting together hundreds of nanofibers**.
- The way the **nanofibers mimicked the collagen fibril** sparked the idea in a lab that primarily works on scaffold-based tissue engineering to create thread-like structures by twisting nanofibers together using custom-made machinery.

- Several innovations globally in suture material have **advanced infection control** and achieved in some cases, better recovery among patients, even as other options such as staples, glues, and strips have become available.

**NOBEL PRIZE 2020 IN MEDICINE**

*Two American scientist Harvey J Alter and Charles M Rice and a British scientist Michael Houghton were awarded the Nobel Prize for Medicine or Physiology.*

**About:**

- The award has been conferred to them for the **discovery of the hepatitis C virus**.
- Their work helped explain a **major source of blood-borne hepatitis** that couldn't be explained by the hepatitis A and B viruses.
- As a result, **highly sensitive blood tests for the virus** are now available and these have essentially eliminated post-transfusion hepatitis in many parts of the world.
- Their discovery has allowed the rapid development of **antiviral drugs** directed at hepatitis C and for the **first time in history, the disease can now be cured**.

**Hepatitis:**

- Hepatitis is an **inflammation of the liver**. The condition can be self-limiting or can progress to fibrosis (scarring), cirrhosis, or liver cancer.
- Hepatitis viruses are the most common cause for the disease but other infections, toxic substances e.g. alcohol, certain drugs, and some autoimmune diseases can also be the cause of it.
- There are **five main types of hepatitis viruses** namely A,B,C,D, and E. While all cause liver disease, they vary in important ways.
- **Hepatitis A and E** are typically caused by the ingestion of contaminated food or water (transmitted via oral-fecal route).
- **Hepatitis B, C, and D** are transmitted through unsafe blood transfusions or contaminated needles/syringes (particularly among the drug users), sexual-transmission, or even mother-to-child transmission.
- Hepatitis A and B are preventable by vaccine.
- There is **no vaccine for Hepatitis C**. However, it can be treated with antiviral medication.

**Indian Scenario:**

- In India, 40 million people are chronically infected with **Hepatitis B virus** and **6 to 12 million with the Hepatitis C virus**.
- In 2018, the government launched the **National Viral Hepatitis Program**. The program is the largest program for Hepatitis B and C diagnosis and treatment in the world.

# Hepatitis A

Hepatitis A is a viral liver disease that can cause mild to severe illness

Globally, there are an estimated **1.4 MILLION** cases every year

Improved sanitation and the hepatitis A vaccine are the most effective ways to combat the disease

Nearly 100% of people develop protective levels of antibodies to the virus within one month after a single dose of the vaccine.

The virus is transmitted through ingestion of contaminated food and water, or through contact with an infectious person.

Hepatitis A is associated with a lack of safe water

There is currently no available treatment

Hepatitis E is found worldwide, but the prevalence is highest in East and South Asia.

# Hepatitis E

Every year there are an estimated **20 MILLION** hepatitis E infections

There are over **3 MILLION** acute cases and

**56,600** hepatitis E-related deaths



The hepatitis E virus is transmitted via the faecal-oral route, principally via contaminated water

# Hepatitis C

The hepatitis C virus can cause both acute and chronic hepatitis infection, and lead to HCV-related liver disease

UP to **500,000** people die each year from hepatitis C-related liver disease

There is currently no vaccine for hepatitis C, however research is ongoing

Antiviral treatment is successful in 50-90% of people treated

The hepatitis C virus is blood-borne and the most common modes of infection are through unsafe injection practices, inadequate sterilisation of medical equipment in some healthcare settings, and unscreened blood

In the UK, only 3% of people with HCV know they have it

# Hepatitis B

Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic diseases

People with hepatitis who require treatment can be given drugs, including oral antiviral agents, but also interferon injections

Hepatitis B is an important occupational hazard for health workers

More than **780,000** people die every year due to the consequence of hepatitis B

The virus is transmitted through contact either the blood or other body fluids of an infected person

### Steps by India to address hepatitis issue:

- Inclusion of Hepatitis B vaccination under the expanded **Universal Immunization Programme**.
- Launching of the **National Viral Hepatitis Control Programme** in July 2018 under **National Health Mission** by the Health Ministry. The program aims to combat hepatitis and achieve countrywide elimination of Hepatitis C by 2030.
- Recently, an automated coronavirus testing device named '**COBAS 6800**' was launched which can also detect viral Hepatitis B & C, among others.

### Nobel Prize

- **Alfred Nobel, a Swedish chemist**, engineer, industrialist, and the inventor of dynamite, in his last will in 1895, gave the largest share of his fortune to a series of prizes in Physics, Chemistry, Physiology / Medicine, Literature, and Peace, to be called the "Nobel Prizes".
- In 1968, the sixth award, the Prize in Economic Sciences was started. The Nobel Prize consists of a Nobel Medal and Diploma, and a document confirming the prize amount.

## CAT QUE VIRUS

*Scientists at ICMR claimed that the Cat Que virus (CQV) has the potential to cause disease in the country.*

### About:

- The study was conducted in **2017-2018** and undertaken to develop **diagnostic tests** for **CQV** prompted by the spread of similar **species of Culex mosquitoes** in India.

### What is the Cat Que Virus?

- It is a **Simbu serogroup virus** of the genus **Orthobunyavirus** (family **Bunyaviridae**).
- The presence of the **Cat Que virus** has been largely reported in **Culex mosquitoes** in **China** and in **pigs** in **Vietnam**.
- **Domestic pigs are considered to be the primary mammalian hosts** and can spread in pigs and other animal populations through mosquitoes.
- It infects both humans and economically important livestock species.

### Symptoms:

- Cat Que virus can cause **febrile illnesses** (such as fever, headaches, chills, muscle, and joint pains), **meningitis** (inflammation of the meninges), and **pediatric encephalitis** (inflammation of the brain) in humans.

### How does it Spread?

- While the infection normally spreads in poultry and mammals,

it could also spread to humans through transmission from **mosquitos and insects**.

- The main way of transmission is when a human host is **bitten by an infected insect or a mosquito**.
- Apart from mosquitoes and **pigs, birds** such as the **Jungle Myna** may also act as a host.
- It could also impact humans through **blood transfusion, transplant, sexual contact, pregnancy, and giving birth**.

### The Cat Que Virus threat to India:

- The researchers cautioned that there's a possibility of the virus causing disease across India due to the spread of similar species of the **Culex mosquitoes** in the country.
- Researchers found antibodies for the virus in **two out of the 883** human serum samples which were taken from various **Indian states during 2014-2017**.
- Both the samples tested showed positive for **anti-CQV IgG antibody** which indicates that they were infected with the virus at some point.
- The ICMR researchers concluded that the **presence of the CQV IgG antibody** in human serum samples and the **replication capability** of the **virus** in mosquitoes indicated a possible **disease-causing potential of CQV** in the Indian scenario.

## 20YEARS OF HIMALAYAN CHANDRA TELESCOPE

*Workshop was held to mark 20 years of Himalayan Chandra Telescope to highlight the science it produced.*

### About:

- Himalayan Chandra Telescope has been used in many coordinated international campaigns to monitor stellar explosions, comets, and exo-planets, and has contributed significantly to these studies.
- The **Himalayan Chandra Telescope** is a 2.01 meters (6.5 feet) diameter **optical-infrared telescope**.
- It is named after **India-born Nobel laureate Subrahmanyam Chandrasekhar**.
- It comes under Ministry of Science and Technology.



- The telescope is mounted with 3 science instruments:
- **Himalaya Faint Object Spectrograph (HFOSC)**
  - ♦ The near IR Imager and
  - ♦ The optical CCD imager.
- It contains a **modified Ritchey-Chretien system** with a primary mirror made of ULE ceramic which is designed to withstand the low temperatures it experiences.
- **Operated and placed at**– It is placed in the cold, dry desert of **Ladakh**, 4500 meters above the mean sea level at the Indian Astronomical Observatory (IAO).
- The telescope is remotely operated from the **Centre for Research & Education in Science & Technology (CREST)**, Indian Institute of Astrophysics (IIA), Hosakote which is about 35 km northeast of Bangalore.
  - ♦ The telescope is remotely operated via an INSAT-3B satellite link.

#### Significance:

- Some of the thrust research areas are the study of solar system bodies like; comets, asteroids, the study of star formation processes and young stellar objects, the study of open and globular clusters, and variable stars in them.
- It has helped in the analysis of elements in the atmosphere of evolved stars, star formation in external galaxies, Active Galactic Nuclei, stellar explosions like novae, supernovae, gamma-ray bursts, and so on.

## UNIFORM CODE OF PHARMACEUTICAL MARKETING PRACTICES (UCPMP)

*The Alliance of Doctors for Ethical Health Care (ADEH) expressed disappointment over the recent government disclosure in Parliament.*

#### About:

- **ADEH stated that** there is no decision to make the **Uniform Code of Pharmaceutical Marketing Practices mandatory**.
- The group added that the issue has been brought to the fore as **the non-compliance of the code by the pharma companies adds to the cost of drugs and encourages corrupt practices**.
- ADEH demanded that **UCPMP should be made mandatory to bring fairness** in the marketing of the **drugs** as the industry has failed to comply with the code voluntarily.

#### What is the Uniform Code of Pharmaceutical Marketing Practices(UCPMP)?

- UCPMP is a **voluntary code** issued by the **Department of Pharmaceuticals** under the **Union Ministry of Chemical and Fertilizers** relating to **marketing practices for pharmaceutical companies** as well as the **medical devices industry**.

- It was made voluntary for **six months** from 1st January 2015. It was to be reviewed after six months.
- **Applicability:** At present, the UCPMP Code applies to Pharmaceutical Companies, Medical Representatives, Agents of Pharmaceutical Companies such as Distributors, Wholesalers, Retailers, and Pharmaceutical Manufacturer's Associations.

#### Key Provisions:

- **No gifts, pecuniary advantages, or benefits** in kind may be supplied, offered, or promised by a **pharma company** or its agents to persons qualified to **prescribe or supply drugs**.
- Companies or their associations/representatives shall not extend:
  - ♦ Any **travel facility inside or outside** the country.
  - ♦ Any **hospitality** like hotel accommodation to healthcare practitioners and their family members under any pretext.
- It also prescribes additional conditions that are to be observed while providing samples.
- The UCPMP Code also provides that the **number of affiliates retained must not be greater than the number reasonably necessary** to achieve the identified need and that the **compensation must be reasonable and reflect the fair market value of the services provided**.

#### Concerns:

- The companies spend a huge amount on travel, accommodation and other expenditures on the doctors for lavish arrangements of the conferences.
- Advocacy and Training to Health Initiatives (SATHI), had in August alleged that **pharmaceutical companies bribe doctors with various gifts**.
- The global experience also shows that **voluntary code does not work**.
- The government in 2016 had indicated that it would **make the code statutory**. But now this U-turn raises suspicion of lack of will on the part of the government to keep its commitment and smells of some unfair deals between the government and the pharma companies.

#### Way Forward:

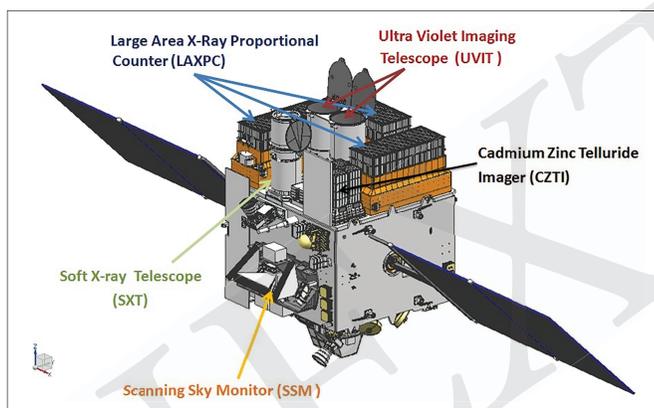
- The UCPMP should be made statutory.
- The DoP should immediately implement a mandatory mechanism for company disclosure of payments towards doctors and professional bodies, including through third parties.
- These disclosures should be made at intervals and put in the public domain.
- It should include the amount spent, individual or entity to which payment was made, and the reason for payment including any services rendered.

## INDIA'S ASTROSAT COMPLETES 5 YEARS OF MAPPING STARS

*AstroSat, India's first multi-wavelength astronomical observatory, completed five years in space.*

### About:

- It is **India's first dedicated multi-wavelength space telescope**. It was launched on a PSLV-XL on 28 September 2015.
- ASTROSAT is designed to observe the universe in the Visible, Ultraviolet, low, and high energy X-ray regions of the electromagnetic spectrum simultaneously with its 5 payloads.
- Till now, AstroSat has explored stars, star clusters, mapping of large and small satellite galaxies of the Milky Way called 'Magellanic Clouds', an energetic phenomenon in the Universe such as the ultra-violet counterparts to gamma-ray bursts, supernovae, active galactic nuclei.



- Astrosat aims at understanding the high energy processes in binary star systems containing neutron stars and black holes, to estimate magnetic fields of neutron stars, to study star birth regions and high energy processes in star systems lying beyond the Milky Way galaxy.
- **This mission has put ISRO in a very exclusive club of nations that have space-based observatories.** Only the United States, European Space Agency, Japan and Russia have such observatories in space.

## FIRST ROOM TEMPERATURE SUPERCONDUCTOR

*Recently, scientists have reported the discovery of the first room-temperature superconductor.*

### About:

- The superconductor was formed by squeezing carbon, hydrogen and sulfur between the tips of two diamonds and hitting the material with laser light to induce chemical reactions.
- At a pressure about 2.6 million times that of Earth's atmosphere, and temperatures below about 15° C, the electrical resistance vanished.
- However, the new material's superconducting superpowers appear only at extremely high pressures, limiting its practical usefulness.

### Why this discovery is significant?

- All superconductors previously discovered had to be cooled to very low temperatures, making them impractical for most uses.
- But, the recently discovered superconductor can **operates at room temperature- the material is superconducting below temperatures of about 15° Celsius.**

### What are Superconductors?

- Superconductors transmit electricity without resistance, allowing current to flow without any energy loss.
- When superconductivity was discovered in 1911, it was found only at temperatures close to absolute zero (-273.15° C).

### Potential Applications:

- If a room-temperature superconductor could be used at atmospheric pressure, it could save vast amounts of energy lost to resistance in the electrical grid.
- And it could improve current technologies, from MRI machines to quantum computers to magnetically levitated trains. Dias envisions that humanity could become a "superconducting society."

## TUBARIAL SALIVARY GLANDS

*Scientists in the Netherlands have discovered a potential new organ in the human throat.*

### About:

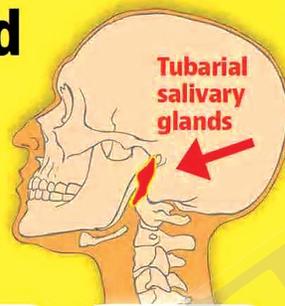
- Researchers at the Netherlands Cancer Institute have identified a set of salivary glands deep in the upper part of the throat and have named them "tubarial salivary glands".
- The discovery may be important for cancer treatment.
- Till now, this nasopharynx region (behind the nose) was thought to host only microscopic, diffuse, salivary glands.

### Tubarial Salivary Glands:

- They are a set of salivary glands deep in the upper part of the throat.
- The glands are about 1.5 inches (3.9 centimeters) in length on average and are located over **a piece of cartilage called the torus tubarius.**
- **Function:** The glands probably lubricate and moisten the upper throat behind the nose and mouth.
- **NOTE:** Until now, there were three known large salivary glands in humans: one under the tongue, one under the jaw and one at the back of the jaw, behind the cheek.

## An unexpected discovery

Scientists stumbled on a previously unknown set of salivary glands while studying prostate cancer



**The new organ is set deep in the upper part of the throat, behind the nose**

**The organ is a set of salivary glands, about 1.5 inches in length on average**

**It is believed to lubricate and moisten the upper throat, the researchers wrote**

### GHAR TAK FIBRE

*The Prime Minister of India has inaugurated 'Ghar Tak Fibre' scheme in Bihar.*

#### About:

- It aims to connect all 45,945 villages of Bihar with high-speed optical fibre internet by 31st March 2021.
- Under the scheme, Bihar has to provide at least five fibre-to-the-home (FTTH) connections per village and at least one WiFi hotspot per village.
- The Scheme will be implemented by the **Ministry of Electronics and Information Technology.**

#### Benefit:

- The Scheme will lead digital services including e-Education, e-Agriculture, Tele-Medicine, Tele-law and other social security schemes in Bihar ensuring easy access to all state natives.

- It is also likely to boost the local employment generation with the implementation of Bharat Net initiative which will be done by recruiting local workers.

### Internet Penetration in Bihar:

- According to TRAI's report, only 30.35% Bihar's population has internet connectivity, much below India's population connectivity of 55%.

### MONOCLONAL ANTIBODIES

*The International AIDS Vaccine Initiative (IAVI) and Serum Institute of India (SII), Pune will develop SARS-CoV-2 neutralising monoclonal antibodies (mAbs)*

#### About:

- IAVI is a non-profit scientific research organization dedicated to addressing urgent global health challenges. It is headquartered in New York, USA.
- SII is the world's largest vaccine manufacturer.

#### Monoclonal Antibodies:

- Antibodies are proteins produced naturally by the immune system that target a specific foreign object (antigen).
- But these are **man-made proteins** that act like a human antibody in the immune system. They are **made by cloning a unique white blood cell.**
- mAbs have **monovalent affinity**, it binds only to the **same epitope** i.e. the part of an **antigen** that is recognized by the **antibody.**
- **Functions:** They are designed to perform many roles, like they can be **used to carry drugs, toxins, or radioactive substances** directly to affected cells. **mAbs are used to treat many diseases**, including some types of **cancer.**

### ICT GRAND CHALLENGE

*Recently, the ICT Grand Challenge was launched by the Ministry of Jal Shakti.*

#### About:

- It is launched by **National Jal Jeevan Mission** in partnership with **Ministry of Electronics & Information Technology (MeitY)** as a **pilot programme in 100 villages.**
- **Aim:** It aims to create innovative, modular, and cost-effective solution to develop a **'Smart Water Supply Measurement and Monitoring System'** to be deployed at the **village level.**
- **Eligibility:** The ICT grand challenge will be inviting proposal from **Indian Tech start-ups, MSMEs, Indian Companies** and

**Indian LLPs.**

- **Benefits:** It will harness the vibrant IoT eco-systems of India for creating smart rural water supply eco-system.
  - It will provide opportunity to work for cause of Jal Jeevan Mission and to assure potable water supply through Functional Household Tap Connections to every rural household.
- It will provide support at ideation Stage, prototype development stage and deployment stage.

- **Example:** Facebook’s list of suggested friends for its users, self-driving cars, etc.

**Concerns Associated with AI:**

- The main limitation of AI is that it learns from the data. This means any inaccuracies in the data will be reflected in the results.
- It is important to make AI responsible as it can be misused for various purposes like Deep Fakes, Cybercrimes etc.

**RAISE SUMMIT**

*The Prime Minister has inaugurated RAISE 2020, a mega virtual summit on Artificial Intelligence (AI).*

**About:**

- **The Responsible AI for Social Empowerment (RAISE 2020)**, a virtual summit on Artificial Intelligence is recently being organized by the **Ministry of Electronics and IT**, in partnership with Industry & Academia.
- It is a first of its kind, a global meeting of minds on Artificial Intelligence to drive India's vision and roadmap for social transformation, inclusion, and empowerment through responsible AI.

**Steps taken by govt to make India, a Global AI Hub:**

- NITI Aayog has released a **National Strategy for Artificial Intelligence (NSAI)** in which it highlighted the potential of AI in boosting India’s annual growth rate.
- NITI Aayog has also created an **AI-specific cloud infrastructure** to facilitate research and development in using high performance and AI-specific supercomputing.
  - It is called **AIRAWAT**, i.e. AI Research, Analytics, and knowLedge Assimilation platform.
- **FutureSkills PRIME** (Programme for Reskilling / Upskilling of IT Manpower for Employability) program is launched to reskill professionals & students in the industry for over 5 years.
- India joined the '**Global Partnership on Artificial Intelligence (GPAI)**' as a founding member to support human-centric development and use of Artificial Intelligence (AI).

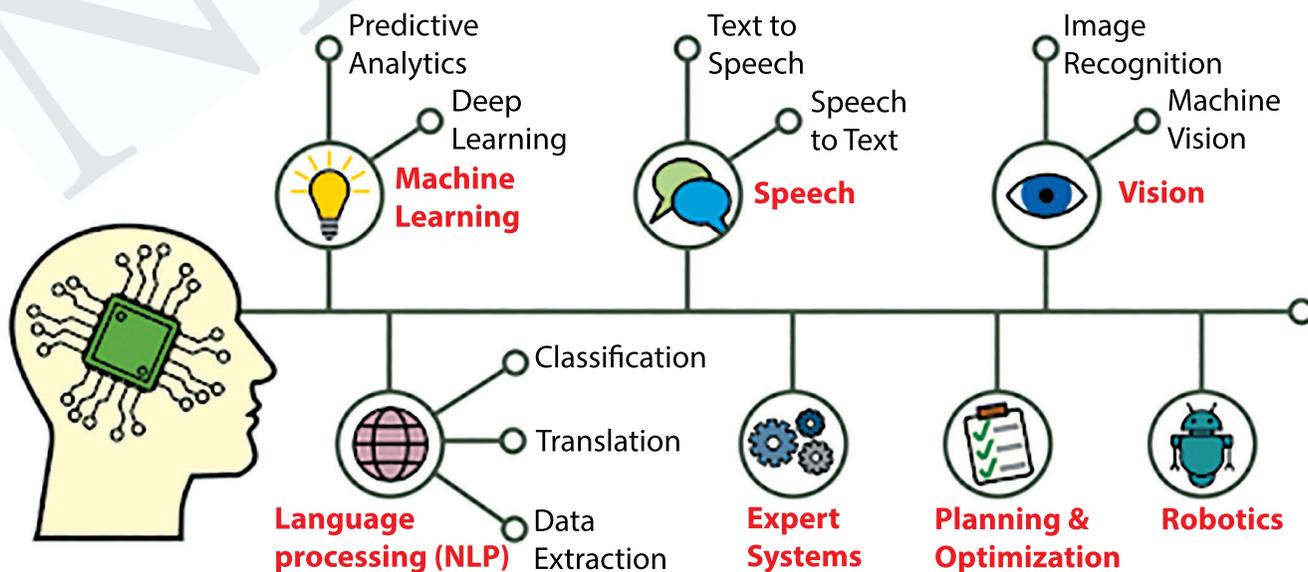
**Artificial Intelligence (AI):**

- AI describes the action of machines accomplishing tasks that have historically required human intelligence.
- It includes technologies like machine learning, pattern recognition, big data, neural networks, self algorithms, etc.

**Way Forward:**

- COVID crisis has given a much-needed opportunity to push for the AI development in India. Thus, India can leverage AI for inclusive development, representing the country's '**AI for All**' strategy.

**ARTIFICIAL INTELLIGENCE**



# 8

# ETHICS

## EUTHANASIA: ASSISTED DYING ACT

*Recently, in New Zealand, as per preliminary referendum results, a majority of voters have voted in favour of the End of Life Choice Act 2019.*

### About:

- The act is meant to give **certain terminally ill** people the option of **requesting medical assistance to end their lives** and to establish a lawful process for assisting eligible persons who are able to exercise that option.
- As per the Act, **assisted dying** means when a person's doctor or nurse gives them **medication to relieve their suffering by bringing on death** or when a person takes the medication themselves.
- Therefore, **act interprets** assisted dying as referring to both **euthanasia and assisted suicide**.
- While the **former refers** to the act of **deliberately ending a person's life** to end their suffering, the **latter refers** to **assisting a person to kill themselves**.

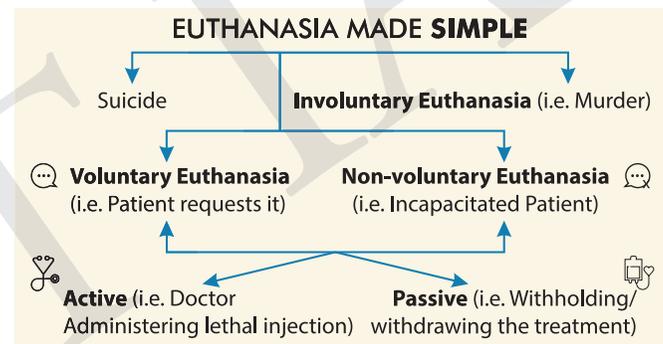
### Euthanasia and its Types:

- Euthanasia ("good death") is the practice of intentionally **ending a life in order to relieve pain and suffering**. It is also known as '**mercy killing**'.
- Definitions of **Euthanasia** and **Physically Assisted Suicide (PAS)** vary across the countries and they can be narrowed down to below 3 categories:

Categories	Definition
Voluntary active euthanasia	When a physician administer medication to intentionally end patient's life with the mentally competent patient's explicit request. (India's case)
Involuntary or Non-Voluntary active euthanasia	When a physician administer medication to intentionally end patient's life but without the patient's request. E.g. Netherlands
Physician Assisted Suicide (PAS)	When physician provides medication at his/her explicit request with the understanding that the patient intends to use the medications to end his/her life. Legal in Germany.

### India's Position on Euthanasia:

- Supreme Court upheld that the **fundamental right to a "meaningful existence"** which includes a person's choice to **die without suffering**.
- It has **permitted a 'living will'** by patients, authorising the **withdrawal of medical support** if they slip into **medically irretrievable conditions** such as irreversible coma.
- Supreme Court has made **passive euthanasia legal**.
- The decision also **saves a lot of money and agony for patients** and their families, and **prevent unnecessary treatments** for the terminally ill.



### Practical issues related with administering euthanasia:

- Morally and ethically**, both euthanasia processes are **difficult for doctors** as **no doctor likes to have a patient die** under his/ her care.
- Even in the presence of a living will, and when one is honour-bound to respect the patient's wishes, there are many questions and doubts.
- The **patient may have been coerced to write the will**, sometimes a living will written at a **certain juncture of a person's life** may not be applicable after a period of time when **circumstances may have changed**.
- Without a fool proof system**, doctors cannot give up on a patient, however desperate the circumstances.
- Even with the legalisation of euthanasia, the **"choice" to die may sometimes not be the final prerogative of the patient**.
- If the **patient is too ill to decide on the will to live**, then **decision-makers possibly will be the medical team and the patients' relatives**, not the patient.

### Arguments in Favour of Euthanasia:

#### Right based Arguments

- People have an explicit right to die:** Human beings have the right to die when and how they want to. Behind this lies the

idea that human beings should be as free as possible as they are independent biological entities, with the right to take and carry out decisions about themselves, providing the greater good of society doesn't prohibit this.

- A separate right to die is not necessary, because our other human rights imply the right to die
  - ♦ The right to life is not a right simply to exist. The right to life is a right to life with a minimum quality and value.
  - ♦ Death is the opposite of life, but the process of dying is part of life.
  - ♦ It is thus argued, that if a minimum quality of life is not achieved then the person has right to end their life.
- **Libertarian argument:** Death is a private matter and if there is no harm to others, the state and other people have no right to interfere.

#### Practical arguments

- It is possible to regulate euthanasia
- Allowing people to die may free up scarce health resources.

#### Philosophical arguments

- **Euthanasia is universalisable:** The person in favour of euthanasia argues that giving everybody the right to have a good death through euthanasia is acceptable as a universal principle, and that euthanasia is therefore morally acceptable.
- **Utilitarian or consequentialist argument:** Euthanasia happens anyway so it is better to regulate it.

#### Moral Rules must be Universalisable

*"do unto others as you would have them do unto you".*

- One of the commonly accepted principles in ethics, put forward by Immanuel Kant, is that only those ethical principles that could be accepted as a universal rule (i.e. one that applied to everybody) should be accepted.
- In other words, a rule is universalisable if it can consistently be willed as a law that everyone ought to obey. The only rules which are morally good are those which can be universalised.

#### Arguments against Euthanasia:

- It goes **against the natural instincts** of human that are to fight for survival.
- **Family members** have the **moral responsibility** to take **good care of their ageing parents** but they **can misuse** this practice to get rid of their parents.
- It **can cause mental distress to Medical practitioners/Doctors** who found themselves in a **dilemma** whether **to stay true to their Hippocratic Oath** or follow the orders to assist in euthanasia.

- It is often argued, even in case for abolition of Capital Punishment, that **God is the creator of life so only God has the right to take away one's life. Humans should not interfere in this 'natural' process.**
- Due to **non-availability of procedures or difficulty in carrying out painless execution**; Not only the exercise can cause extreme pain to the person but its failure **can result in complex ethical issues (Whose liability and responsibility will it be if the person survives but becomes physically or mentally disabled).**
- Others argue that whatever rights we have, are limited by our obligations towards family and friends.
- We should also take account of our obligations to society, and balance our individual right to die against any bad consequences that it might have for the community in general.
- Lastly, the argument leaning on the principle of universalisability doesn't actually provide any positive justification for anything - genuine moral rules must be universalisable, but universalisability is not enough to say that a rule is a satisfactory moral rule.
  - ♦ Universalisability is therefore only a necessary condition, not a sufficient condition for a rule to be a morally good rule.

#### International Practices

- The European Convention on Human concluded that the right to life did not give any right to self-determination over life and death, since the provisions of the convention were aimed at protecting and preserving life.
- In **Britain, the Suicide Act (1961)** only acknowledge that you can't punish someone for succeeding at suicide. Some say that this cannot be taken as a legal backing for allowing Euthanasia.

#### Measures to be taken for Resolving Issues Related with Administering Euthanasia:

- **Medical Attorney:** The Supreme Court decision on a living will from a patient quells misgivings from the family and there are chances of criminal action against doctors.
- Thus a 'living will' makes sense when coupled with a medical power of attorney and independent **third party monitoring**.
- This will allow for **a middle way** considering all the interests like the right of the patient, the state's interest in human life, and the interest of the patient's family.
- **Palliative care:** Control over the manner and timing of a person's death has not been and should not be a goal of medicine.
- **India needs improved access to high-quality healthcare** for the terminally ill so that they go in peace, whenever they do.
- This is referred to as palliative care right from the time an illness is diagnosed till the end of life.

# 9

# CULTURE

## SIR SYED DAY

*Sir Syed Day is observed on 17<sup>th</sup> October every year to mark the birth anniversary of Sir Syed Ahmed Khan.*

### About:

- **Background:** He was born on **October 17, 1817**, in Delhi to a wealthy family that was close to the Mughal court.
- He **started his career as a civil servant** and served the British before the revolt of 1857.
- The 1857 revolt was one of the turning points in Syed Ahmed's life and he penned a pamphlet titled "**The Causes of the Indian Revolt**" to explain the reasons for the revolt from a "native perspective".
- He **supported the British during the 1857 revolution**. In 1859 he published the booklet **Asbab-e-Baghawat-e-Hind (The Causes of the Indian Revolt)** in which he studied the causes of the Indian upheaval.
- He witnessed **the near annihilation of the Muslim elites** and those situations prompted him to take up the case of Muslims and his life-long journey as an Islamic reformer and educationist is a testament to his dedication.
- He foresaw the imperative need for the Muslims to **acquire proficiency in the English language** and modern sciences, if the community were to maintain its social and political clout, particularly in Northern India.

### Role as a Social Reformer:

- He was one of the **greatest social reformers and a great national builder of modern India**. He promoted Democratic ideas and strived for freedom of expression.
- He raised a voice against the **existing religious intolerance, ignorance, and irrationalism prevailing in the society at that time**.
  - ♦ He denounced the orthodox systems of purdah, polygamy, and easy divorce of the Muslim community.
- **Tahzebul Akhlaq (Social Reformer in English)**, a magazine founded by him, tried to awaken people's consciousness on social and religious issues in very expressive prose.

### Role as an Educationist:

- He began to prepare the **road map for the formation of a Muslim University** by starting various schools.
- His main priority was the **advancement of modern western education**, in Muslim society.

- He instituted the **Scientific Society in 1863** to instill a scientific temperament into the Muslims and to make the Western knowledge available to Indians in their language.
- He launched The **Aligarh Institute Gazette**, an organ of the Scientific Society in March 1866, and succeeded in agitating the minds in the traditional Muslim society.
- In 1875, Sir Syed **founded the Madarsatul Uloom in Aligarh**. His objective was to build a college in line with the British education system but without compromising its Islamic values.
- He instituted the **All India Muslim Educational Conference** that revived the spirit of Muslims at the national level.

### The Aligarh Movement:

- **Sir Syed Ahmad Khan** is best known for the **Aligarh Movement, a systemic movement** aimed at reforming the social, political, and educational aspects of the Muslim community.
- In 1886, he set up the **Mohammedan Anglo-Oriental Education Congress** which was later renamed the **Mohammedan Anglo-Oriental Educational Conference**. It aimed to bring together education and culture.
- He also emphasized the **need for an autonomous Muslim institution** free of any government funding.
- It undertook to **modernize Muslim's education** by adapting English as a medium of learning and western education rather than just focusing on traditional teachings.
- The movement helped the Muslims' revival and **gave them a common language Urdu**.

### Political Ideology of Sir Syed:

- His idea of being a Muslim was not against the idea of being an Indian. He famously said, "Hindu and Muslim are two eyes of India".
- Followers of Sir Syed have argued that his political ideology helped the Muslim Community to achieve its goal and secure political power in India. His viewpoint was the guiding force behind the creation of the All India Muslim League in 1906, as a political party separate from the Congress.

### Critical of the Indian National Congress:

- In 1888, three years after the Indian National Congress was founded, he delivered a lecture in Meerut on the invitation of the Muslims residing in the area. He was critical of the Congress and talked about how it was essentially a party of Bengali Hindus who could not best represent the viewpoint of a Muslim population. He called for greater representation of Muslims.

- It is believed that Sir Syed thought that Congress was mainly a Hindu body that worked for the protection of the rights of the Hindus.
- He requested the Muslims to get modern education first then come into the field of politics to protect their rights. He believed that the political activity would divert the attention of the Muslims from the constructive task and revive British mistrust.

### Political Controversy:

- He was **condemned for inspiring communal divisions between Hindus and Muslims** and is recognized as one of the earliest supporters of the Two-Nation Theory.
- Historians have debated that Sir Syed was **emotionally incapable to accept the prospect that an independent India's Hindu-majority** would come to rule Muslims, who had been the former colonial rulers.
- He supported the thought that **Hindu culture would weaken the Perso-Arabic nature of Muslim culture**, which had enjoyed a dominant status under Muslim rulers for centuries.
- He disapproved of Indian nationalists and **professed the incompatibility of Muslims and Hindus**. This thought expanded the socio-political gulf between the communities that had emerged with **the Urdu-Hindi controversy**.
- He was wary of the **rise of Indian nationalism** as he thought power would pass into the hands of the Hindus alone and advocated Muslims to have loyalty to the British. In his own words, "we do not want to become subjects of the Hindus instead of the subjects of the people of the Book."

### JNANPITH AWARD TO MAHAKAVI AKKITHAM

*Renowned Malayalam poet Akkitham Achuthan Namboothiri was conferred Jnanpith Award.*

#### About:

- It has achieved the recognition of **the highest literary award in the country**.
- English along with other Indian languages is considered for the Award.
- The Award is open **for only Indian citizens** and is given annually.
- The prize carries a cash award of **Rs. 11 lakhs**, a citation, and a bronze replica of Vagdevi (Saraswati), the goddess of learning.
- It is sponsored by the cultural organization Bharatiya Jnanpith.
- In 2019, **author Amitav Ghosh** was felicitated with the 54th Jnanpith Award. He became **the first English language** writer to become a Jnanpith laureate.

#### About the Author:

- Akkitham is the sixth writer to bag the Jnanpith Award for Malayalam literature.
- He is instrumental in **heralding modernism in Malayalam poetry**.
- He is the only living poet being called Mahakavi (great poet) in Malayalam.
- He has contributed seminal works such as Pthalathinte Muzhakkam, Irupatham Noottandinte Ithihasam, and Balidarshanam.
- His **work Balidarshanam** won the State and Central Sahitya Akademi Awards in 1972-73.
- He was even **awarded Padmashri in 2017**.

### NOBEL PRIZE IN LITERATURE

*The Nobel Prize in Literature 2020 has been awarded to the USA poet Louise Glück.*

#### About:

- Glück was born in 1943 in New York. She is now a professor of English at Yale University.
- She is known **"for her unmistakable poetic voice that with austere beauty makes individual existence universal"**.
- Her poetry focuses on the painful reality of being human, dealing with themes such as death, childhood, and family life.
- She is the **fourth woman to win the prize for literature since 2010**, and only the 16<sup>th</sup> since the Nobel prizes were first awarded in 1901.
- The last American to win was Bob Dylan in 2016.
- Glück won the **Pulitzer Prize in 1993** for her collection The Wild Iris and the National Book Award in 2014.

### DAIRY PRODUCTION IN THE INDUS VALLEY CIVILISATION

*A new study has revealed the evidence of dairy products in Indus Valley Civilization.*

#### About:

- A study by Indian and Canadian archaeologists has found that dairy products were being produced by the Harappans as far back as 2500 BCE. The finding reveals the earliest direct evidence of dairy production.
- The **evidence was found from the pottery** found at the archaeological site of **Kotada Bhadli**, a rural settlement located in Gujarat. Of the 59 samples studied, 22 showed the presence of dairy lipids.

### Key Points Related to the Study:

- Dairy production in India began as far **back as in the 3rd millennium BCE** and may have been a **factor behind sustaining the Indus Valley Civilisation**.
- Through a process called **stable isotope analysis**, the researchers were also able to identify the type of ruminant used for dairy and concluded that these were cattle, like cows and buffalo, rather than goats and sheep.
- Traces were seen in **cooking vessels** indicating that milk may have been boiled and consumed.
- There are also remains of a perforated vessel, and similar vessels were used in Europe to make cheese. So it is possible that they were further processing milk into different forms.
- The large herd was found that indicates that milk was produced in surplus so that it could be exchanged and there could have been some kind of trade between settlements.

### The technique used by researchers:

- They have used **Molecular analysis techniques** to study the residues from ancient pottery.
- Pots are porous, so as soon as we put any liquid form of food, it will absorb it. Thus, preserving the molecule of fats and proteins.



### Harappan Civilisation:

#### Excavations

- In the 1920s, the Archaeological Survey of India (ASI) carried out excavations in the Indus valley wherein the ruins of the two old cities, viz. **Mohenjo-Daro** and **Harappa** were unearthed.
- Both cities had similar organizations and featured citadels, central areas in a city that were heavily fortified—protected with defensive military structures.

### Extensions and Phases

- The Indus River Valley Civilization ( 3300-1300 BCE) also known as the Harappan Civilization, was extended from **modern-day northeast Afghanistan** to Pakistan and northwest India.
- It is often separated into three phases:
  - ♦ The **Early Harappan Phase** from 3300 to 2600 BCE, the **Mature Harappan Phase** from 2600 to 1900 BCE, and the **Late Harappan Phase** from 1900 to 1300 BCE.

### Features:

- Important innovations of this civilization comprise **standardized weights and measures, seal carving, and metallurgy with copper, bronze, lead, and tin**.
- The Indus cities are noted for their **urban planning**.
- They had baked brick houses, elaborate drainage systems, water supply systems, and clusters of large, nonresidential buildings.
- The most fascinating thing about the Indus Valley **Civilisation is that it is faceless** there is **no king, no bureaucratic organizations**, but there are these very close regional interactions between settlements, a symbiotic relationship of giving and take that helped the civilization survive for so long.

### The Decline of Civilization:

- The Indus Valley Civilization declined around 1800 BCE but the actual causes behind its demise are still debated.
- Invasion by Aryans, decline due to natural causes, flooding because of a shift in river courses are among the major theories on its decline.

## 77 YEARS OF AZAD HIND GOVT

*Recently, the 76<sup>th</sup> anniversary of the formation of the Azad Hind Government was celebrated.*

### About:

- Netaji Subhash Chandra Bose had announced the establishment of the provisional government of Azad Hind in **occupied Singapore in 1943**.
- Also known as **Arzi Hukumat-e-Azad Hind**, it was supported by the Axis powers of Imperial Japan, Nazi Germany, the Italian Social Republic, and their allies.

The provisional government was also formed in the Japanese-occupied Andaman and Nicobar Islands. The islands were reoccupied by the British in 1945.

- Bose was convinced that armed struggle was the only way to achieve independence for India.

- It drew ex-prisoners and thousands of civilian volunteers from the Indian expatriate population in Malaya (present-day Malaysia) and Burma (now Myanmar)

**Features:**

- The Azad Hind government had its court, civil code, and currency.
- Its **provisional capital was Port Blair**, while its capital-in-exile was Rangoon and Singapore.

- Bose was the head of the state, the prime minister, and the minister for war and foreign affairs.
- **Captain Lakshmi** headed the women’s organization.
- **S A Ayer** headed the publicity and propaganda wing.
- **Rash Behari Bose** was designated as the supreme advisor.

Bose’s death was seen as the end of the Azad Hind movement. The Second World War also ended in 1945 with the defeat of the Axis powers.

Free India or Azad Hind, an Indian provisional government, was established in Singapore on Oct 21, 1943 by Subhas Chandra Bose

**“It is blood alone that can pay the price of freedom. Give me blood and I will give you freedom!”**

# DREAMING OF AN AZAD HIND

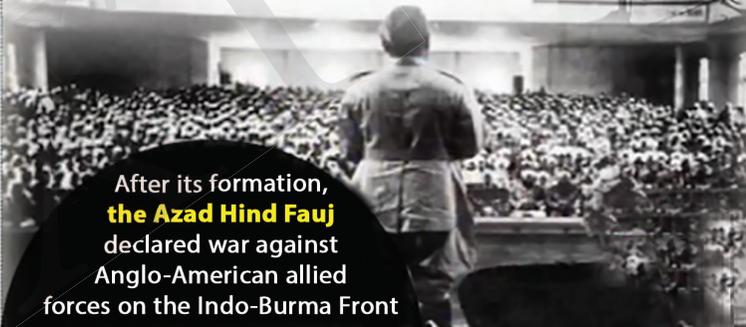


**Established** by Indian nationalists in exile with monetary, military and political assistance from **Imperial Japan**

Had its own currency, court and civil code, and postage stamps

Gave greater legitimacy to the Indian **independence struggle**

Given limited jurisdiction over Andaman and Nicobar Islands, which were **renamed “Shaheed” and “Swaraj”** respectively, and parts of Manipur and Nagaland



After its formation, **the Azad Hind Fauj** declared war against Anglo-American allied forces on the Indo-Burma Front

## TRACING INA HISTORY



(Clockwise from top) Bose with INA; its currency was used in Moirang, Manipur, during Azad Hind government; a stamp issued on 25<sup>th</sup> anniversary of Azad Hind govt

- Subhas Chandra Bose formed the provincial government of Azad Hind in Singapore on Oct 21, 1943. With Indian leaders in prison and people unamed, he said it was not possible to set up the provisional government in India or launch an armed struggle from within
- Netaji’s declaration guaranteed Indian citizens religious liberty as well as equal rights and opportunities. It declared its resolve to... transcend all the differences fostered by an alien government
- 3 INA officers, Capt Shah Nawaz Khan, Capt P K Sahgal and Lt GS Dhillon, were branded traitors by the British and put on trial at Red Fort. The swelling tide of support for the trio led to their release
- On July 8, 1945, Netaji laid the foundation of INA War Memorial to commemorate INA’s ‘Unknown Warrior’

# 10

# MISCELLANEOUS

## VIJAYALAKSHMI RAMANAN

*Wing Commander (Retd) Dr Vijayalakshmi Ramanan died recently at the age of 96.*

### About:

- She was born in February 1924 and pursued her MBBS from Madras Medical College in 1943.
- She was awarded the best outgoing student in 1948 and completed her DGO and MD in obstetrics and gynecology.
- Her family has **military connections** as her father was a prominent public health official in Chennai (then Madras) who had served **during World War I**.
- She was the **first woman commissioned officer** of the **Indian Air Force**.
- There were no uniforms for women when Vijayalakshmi joined the Force so she decided to have a **custom-made saree tailored** in air force blues and a tan blouse, which was later adopted as a **standard**.
- She was awarded the Vishisht Seva Medal in 1977
- She was also the recipient of the Balfour Memorial Medal from Madras University.



## SKAL INTERNATIONAL ASIA AREA (SIAA) CONGRESS

*The UT of Jammu and Kashmir will host the 50th annual Skal International Asia Area (SIAA) Congress in 2021.*

### About:

- The Congress is likely to be held in April at Srinagar's Sher-e-Kashmir International Convention Centre (SKICC).
- J&K had won the bid during the annual general meeting recently against four other cities.
- This event will pave the way for international tourism players to visit Kashmir and increase the international tourist footfall.

### Skal International:

- Founded in 1934, Skål International is the only professional organization promoting global Tourism and friendship, uniting all sectors of the Tourism industry.

- It is the world's largest global network of Tourism Professionals promoting Tourism, Business, and Friendship worldwide.
- Its members are Directors and Executives of the Tourism sector who relate to each other to address issues of common interest, improving a business network, and promoting destinations.
- It is an Affiliated Member of the World Tourism Organization (UNWTO).
- Skål International holds an annual World Congress each year in a different country.

## SAWANTWADI TOY

*Maharashtra Circle of India Post released postcards on 'Sawantwadi Toys'.*

### About:

- The picture postcards were released to mark the 151 years of Indian Post.
- It refers to hand-made works of art on wood in Sawantwadi, a town in the Sindhudurg district of Maharashtra. Most of these toys are made in the village of Kolgaon in Sawantwadi taluka.
- These toys are made from the wood of the Indian Coral tree (*Erythrina variegata*).
- Craftsmen who make these toys belong to the **Chittari community** who came to Sawantwadi from Karwar and Goa.
- The toy-making flourished during the patronage of the erstwhile ruler Khem Sawant.
- It became famous for its hand-made ganjifa cards used in an ancient game that dates back to the Mahabharata times.



**Present Scenario:**

- Wooden toys were very much in demand till recent times but plastic toys, especially those made in China, flooded the market in the last few years, reducing the demand for wooden toys.
- In present times hardly anyone is interested in manufacturing wooden toys. Five or six families are trying to preserve the craft but sales are depleting.
- At present there is no proper system to train people in this craft, leaving families in the business to train the next generation to protect the craft.

**VIGYAN JYOTI AND VIGYAN PRASAR**

*The Department of Science & Technology (DST) and IBM India are scaling up Vigyan Jyoti and Vigyan Prasas schemes.*

**About:**

- This has been done to expand existing opportunities for **meritorious girls** to nurture their interest in **Science Technology, Engineering, and Mathematics (STEM)**.

**Vigyan Jyoti:**

- It is a program to promote STEM learning among girl students and to inspire them towards STEM careers by creating a level-playing field for meritorious girls from grades 9 to 12 to pursue STEM in their higher education, especially from the top colleges in the areas where girls are hugely underrepresented.
- The Vigyan Jyoti program was launched by DST in 2019.
- The program provides a scholarship, visit to nearby scientific institutions, science camps, lecturers from eminent women scientists, and career counseling.
- The program is currently implemented by Jawahar Navodaya Vidyalaya (JNV) in 58 districts, with the participation of about 2900 students.
- The partnership with IBM India will strengthen the current activities and expanded to include more schools in the future.
- Women tech experts working at IBM India will interact inspire girl students to plan for a career in STEM under the program.

**Engage with Science (Vigyan Prasas):**

- **Vigyan Prasas is an autonomous body under the DST** which aims to help make science in India through several strategic initiatives, including 'Engage with Science'.
- **Engage with Science** is an interactive platform that will be built on the India Science (an Over-The-Top platform) to encourage and inspire high school students to pursue Science & Technology (S&T) for a career.

- As part of the collaboration, **IBM will run the day-to-day activities of the program, including student workshops and seminars and mentoring of the students.**
- 'Engage with Science' will actively engage with schools, provide recognition, and glorification to select teachers of S&T subjects. The programs, when aired on the India Science channel, shall in turn result in awareness around teachers and schools.

**SOIL-TRANSMITTED HELMINTHIASES (STH)**

*As per the Ministry of Health and Family Welfare, states in India have witnessed reduction in worm prevalence.*

**About:**

- To assess the prevalence of STH in India, the Ministry of Health and Family Welfare in 2016, appointed **the National Centre for Disease Control (NCDC)** as the nodal agency to coordinate and conduct nationwide baseline STH mapping and to check the progress of the National Deworming Day Program (NDD).
- It completed the exercise by the end of 2016. As of date, the follow-up surveys are completed in 14 States and all **14 States have reported a reduction in STH prevalence** out of which 9 have shown substantial reduction.

**What is Soil-Transmitted Helminthiasis (STH)?**

- Soil-Transmitted Helminths refer to the intestinal worms infecting humans that are transmitted through contaminated soil.
- Intestinal worms are parasites that live in the human intestines and consume nutrients and vitamins needed for a child.
- Three main types of helminths infect people, roundworm (*Ascaris lumbricoides*), whipworm (*Trichuris trichiura*), and hookworms (*Necator americanus* and *Ancylostoma duodenale*).
- These worms depend on the human body for their food and survival and while being there, they lay thousands of eggs each day.

**How is STH transmitted?**

- Soil-transmitted helminths are **transmitted by eggs** that are passed in the **feces of infected people** and get transmitted to other humans where sanitation conditions are poor.
- These eggs contaminate soil too. For example, people become infected with hookworm primarily by walking barefoot on contaminated soil.

**What are its effects on humans?**

STHs hamper the nutritional status of the people they infect in multiple ways.

- The worms feed on host tissues, including blood, which leads to a **loss of iron (Anemia) and protein.**
- Some STH like Hookworms can cause chronic intestinal blood loss.
- They cause **malabsorption of nutrients and vitamins (eg. Vitamin A)**
- Worm infection can also lead to diarrhea; dysentery; loss of appetite; reduced nutritional intake and physical fitness.

#### Steps were taken by India to reduce STH prevalence:

- The **National Deworming Day (NDD)**, (Ministry of Health and Family Welfare), is being implemented as a **biannual single day program** implemented through the **schools** and **Anganwadis.**

- 1-19 years old are being **administered Albendazole** (400 mg) tablet across Government, Government-aided schools, Anganwadis, Private schools, and other educational institutions.
- **The Swachh Bharat Mission** has to a large extent addressed the issue of open defecation in many States which reduces parasite prevalence in the open environment.

#### Way Ahead:

- There needs to be a special focus **on out-of-school children** and adolescents through intensified outreach and also using peer-group and youth-group networks to administer Albendazole.
- Private schools need to raise awareness among parents and increase participation.



### Deworming infants, children and women for better health



Intestinal parasitic worms (soil-transmitted helminths) are spread through soil, contaminated by human faeces.

Worm infections interfere with children's nutritional uptake and can result in malnourishment, anaemia, and stunted growth.



**Periodic treatment of at-risk populations reduces the intensity of infection. No individual diagnosis is needed.**

#### Treatment with what?



Free deworming medicines such as albendazole or mebendazole

#### Why treat everyone?



To reduce ill health (malnutrition, anaemia, impaired growth); To prevent others from acquiring severe infection

#### Who should be treated?



Preschool, school-age children and women of reproductive age

#### Where can treatment be sought?

Schools and community health centres



**Global target: To reach 75% of children in need of treatment by 2020**

- Chances of reinfection are very high, thus a second dose of albendazole is required.

## KISAN SURYODAYA YOJANA

*Prime Minister has launched the 'Kisan Suryodaya Yojana' in Gujarat.*

### About:

- The scheme is aimed at **providing day-time electricity** to farmers in **Gujarat** for **irrigation** and **farming** purposes.
- Along with this Prime Minister also inaugurated two more projects through video conference:
  - ♦ **2.3 km-long ropeway project** on Mount **Girnar** in **Junagadh city**, a major pilgrimage site.
  - ♦ **Paediatric Heart Hospital** attached with U.N Mehta Institute of Cardiology and Research Centre and a **Mobile Application for telecardiology** at the Ahmedabad Civil Hospital in Ahmedabad.

### About Kisan Suryodaya Yojana:

- Under this yojana, **Rs 3,500 crore** will be spent over the next **three years** for providing **solar power** to farmers for **irrigation during the daytime**.
- The aim is to provide **16 hours (between 5 AM to 9 PM)** of **power supply** to farmers in the state every day.
- The **state government** has allocated a budget of **Rs 3500 crore** for **installing transmission infrastructure** under this scheme by **2023**.
- **234 '66-Kilowatt' transmission lines**, with a total length of **3490 circuit kilometers (CKM)** will be established under the project, in addition to **220 KV substations**.
- Under this scheme, farmers in **1,055 villages in Junagadh, Gir Somnath, and Dahod districts** will be given solar power and this scheme will be extended to farmers across the state of Gujarat in the next three years.

### Significance of Kisan Suryodaya Yojana:

- It would help in the **expansion of micro-irrigation** in the state.
- It would complement irrigation projects of the State- **Sujalam Sufalam** and **SAUNI (Saurashtra-Narmada Avtaran Irrigation)** Yojana.
- It would complement other central government initiatives like **Neem coated urea**, **Soil Health Cards**, **KUSUM Yojana**, etc. which are already in place for farmers.
- India has now reached a **5th position** in the world in the last few years in **solar power** and this project would further strengthen its position.

- Further, this yojana is another impetus to the ambitious plan of **'One Sun, One World, One Grid'**.
- **NOTE:** Micro-irrigation is defined as the frequent application of small quantities of water directly above and below the soil surface; usually as discrete drops, continuous drops, or tiny streams through emitters placed along a water delivery line.

## NAZCA LINES

*A giant cat geoglyph was discovered recently on a hill at the famous Nazca Lines site in Peru.*

### About:

- The Nazca Lines in **southern Peru** are a group of pre-Columbian geoglyphs etched into desert sands.
- These are a group of geoglyphs known for the depictions of larger-than-life animals, plants, and imaginary beings.
- These are believed to be the greatest known archaeological enigma, owing to their size, continuity, nature, and quality.
- The site is around 450 km away from the capital Lima.
- The Lines were first discovered in 1927 and were declared a **World Heritage Site by UNESCO in 1994**.

### Cat Geoglyph:

- It dates from **500 BC – 200 AD (Paracas age)** and is believed to be older than the ones previously found at Nazca.
- The Paracas culture was an Andean society existing between approximately 800 BCE and 100 BCE, with extensive knowledge of irrigation and water management.
- It was in present day Peru in the Paracas Desert region.
- Representations of felines of this type are frequent in the iconography of ceramics and textiles of the Paracas society.



## Multiple Choice Questions

- With reference to Central Pollution Control Board, consider the following statements:
  - It is statutory organization established under Air (Prevention and Control of Pollution) Act 1981.
  - It coordinates the activities of various State Pollution Control Boards and resolve disputes among them.
 Which of the statements given above is/are correct?
 

(a) 1 only                      (b) 2 only  
(c) Both 1 and 2              (d) Neither 1 nor 2
- With reference to Climate and Clean Air Coalition, consider the following statements:
  - It is an intergovernmental organization committed to take action for reducing short lived climate pollutant.
  - Short lived pollutants include carbon dioxide, nitrogen oxides, aerosols, methane and black carbon.
  - These pollutants are called super pollutants because they are more powerful at warming the planet.
 Which of the statements given above is/are correct?
 

(a) 1 and 2 only              (b) 2 and 3 only  
(c) 1 and 3 only              (d) 3 only
- With reference to Graded Response Action Plan, consider the following statements:
  - It is institutionalized measure to be taken when air quality deteriorates.
  - It is incremental in nature and works only as an emergency measure.
  - It is applied to all the states and Union Territories.
 Which of the statements given above is/are correct?
 

(a) 1 and 2 only              (b) 2 and 3 only  
(c) 1 and 3 only              (d) 1, 2, and 3
- With reference to Environment Protection (Prevention and Control) Authority, consider the following statements:
  - It is Supreme Court mandated body to take air pollution control measures for National Capital Region.
  - It enforces Graded Response Action Plan.
 Which of the statements given above is/are correct?
 

(a) 1 only                      (b) 2 only  
(c) Both 1 and 2              (d) Neither 1 nor 2
- With reference to Minimum Support Price (MSP), consider the following statements:
  - It is the minimum price at which government buys grains from farmers.
  - It is declared before sowing season by the Commission for Agricultural Costs and Prices.
  - MSP is announced for cereal, pulses, jute, sugarcane and oilseeds only.
 Which of the statements given above is/are correct?
 

(a) 1 only                      (b) 2 and 3 only  
(c) 1 and 3 only              (d) 1, 2 and 3
- With reference to Vigyan Jyoti scheme, consider the following statements:
  - It aims to create a level playing field for the meritorious girls to pursue Science, Technology, Engineering and Mathematics as their career in higher education.
  - It targets girls from class 11 to 12.
  - The scheme is administratively under control of Ministry of Human Resource Development.
 Which of the statements given above is/are correct?
 

(a) 1 only                      (b) 2 and 3 only  
(c) 1 and 3 only              (d) 1, 2 and 3
- With reference to Chief of Defence Staff (CDS), consider the following statement:
  - CDS is the highest military officer that will oversee and coordinate the working of other three services.
  - He will exercise military command over other three services.
 Which of the statements given above is/are correct?
 

(a) 1 only                      (b) 2 only  
(c) Both 1 and 2              (d) Neither 1 nor 2
- With reference to Mekong Ganga Cooperation, consider the following statements:
  - Mekong Ganga Cooperation is an initiative for development of inland waterways in the river Mekong and Ganga.
  - It is an initiative by India, China, Bangladesh, and 6 ASEAN countries.
 Which of the statements given above is/are correct?
 

(a) 1 only                      (b) 2 only  
(c) Both 1 and 2              (d) Neither 1 nor 2
- With reference to UN Human Rights Council, consider the following statements:
  - The Human Rights Council is an inter-governmental body responsible for protection of all human rights.
  - It is created in 1945 within United Nations System.
 Which of the statements given above is/are correct?
 

(a) 1 only                      (b) 2 only  
(c) Both 1 and 2              (d) Neither 1 nor 2
- Which of the following writs is said to be a guarantor of personal freedom?
 

(a) Mandamus                      (b) Habeas Corpus  
(c) Quo warranto              (d) Certiorari
- With reference to CRISPR-Cas 9 technology, consider the following statements:
  - CRISPR technology is a gene-editing technology that can be used for the purpose of altering genetic expression or changing the genome of an organism.

2. The protein Cas9 is used as molecular scissors, capable of cutting strands of DNA.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

12. With reference to National Authority for Recycling of Ships, consider the following statements:

1. It is the apex body to administer, supervise, and monitor all activities relating to ship recycling.
2. Director General of Shipping is notified head of the Authority.
3. The authority has been established under Section 3 of the Merchant Shipping Act of 1958.

Which of the statements given above is/are **not** correct?

- (a) 1 and 2 only (b) 1 only  
(c) 2 and 3 only (d) 3 only

13. With reference to International Maritime Organization (IMO), consider the following statements:

1. IMO is specialized agency of United Nation responsible for setting global standards of safety and security of international shipping.
2. It was formed since the inception of United Nations System with India as its founder member.
3. Its recommendations are strictly binding on members of the organization.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 1 only  
(c) 2 and 3 only (d) 1, 2 and 3

14. With reference to Employees' Provident Fund Organization, consider the following statements:

1. It implements the Employees' Provident Fund and Miscellaneous Provisions Act, 1952,
2. It comes under administrative control of Labor Ministry.
3. It operates three schemes - EPF Scheme 1952, Pension Scheme 1995 (EPS) and Insurance Scheme 1976 (EDLI).

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 1 only  
(c) 2 and 3 only (d) 1, 2 and 3

15. With reference to World Food Program, consider the following statements:

1. It was established by the Food and Agriculture Organisation and UN General Assembly.
2. It is headquartered in Geneva, Switzerland.
3. It was awarded Nobel Peace Prize 2020.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3

16. With reference to the Public debt in India, consider the following statements:

1. India's public debt has steadily increased in the last decade.
2. The public debt ratio is the ratio between a country's government debt and its gross domestic product (GDP).

3. A high public debt ratio indicates higher capabilities of a country to repay its debts.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3

17. With reference to the fertilizer subsidy in India, consider the following statements:

1. Under Nutrition Based Subsidy scheme government fixes the MRP of the fertilizers.
2. There is a limit of 100 bags of fertilizer that an individual can purchase at one time
3. Registering sale of fertilizer on e-Urvarak platform is compulsory for claiming subsidy.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3

18. Which body releases the World Economic Outlook?

- (a) IMF (b) World Bank  
(c) G-20 (d) OECD

19. With reference to the International Monetary Fund (IMF), consider the following statements:

1. It is one organ of the Bretton Woods Twin.
2. Reducing poverty and promoting employment are the goals of the IMF.
3. Presently IMF has 189 members.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3

20. With reference to the LTC Voucher Scheme, consider the following statements:

1. Instead of one LTC during 2018-21, employees will receive a full cash payment on leave encashment and fare.
2. Only digital mode of payment will be allowed.
3. The money is to be spent on goods attracting GST of 5% or more.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3

21. With reference to the Multi Modal logistics park, consider the following statements:

1. India's first multi modal logistics park will be established in Assam.
2. It is created under the Sagarmala scheme of Government of India.
3. It will create direct connectivity with NH 17.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3

22. With reference to Kisan Suryodaya Yojana, consider the following statements:

1. It is aimed at providing all day and night, the solar power supply to the farmers' household.
2. It will be implemented in Gujarat, Maharashtra and Rajasthan.

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Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

23. With reference to Soil Transmitted Helminthiases, consider the following statements:

1. It is parasitic infection transmitted by eggs of intestinal worms.
2. The infection largely affects children by causing chronic intestinal blood loss leading to anaemia.
3. Albendazole tablet is the effective remedy for the prevention of infection.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3

24. Sawantwadi Toys are famous for which of the following state?

- (a) Gujarat (b) Maharashtra  
(c) Karnataka (d) Madhya Pradesh

25. The term Regulatory Sandbox recently seen in news, which of the following depict its correct meaning?

- (a) It is a framework that allows FinTech startups and other innovators to conduct live experiments in a controlled environment of the regulator.
- (b) It entails the set of guidelines issued by SEBI to control the flow of P-Notes in India.
- (c) It is framework established by the government to check the feasibility of its new Direct Tax Code.
- (d) It is the platform established by the RBI to register complaints against the banking regulations.

26. With reference to India's seaplane project, consider the following statements:

1. India's first seaplane project was launched in the state of Gujarat.
2. Seaplane project will be beneficial for the aquatic ecosystem.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

27. With reference to Bharatmala Pariyojana, consider the following statements:

1. It is an umbrella project for highway sector in India.
2. It aims to construct national highways across the land frontier of India in 5 years from 2017 to 2022 under Phase I
3. Under Phase II, another 48,000 km of highways will be built by 2024.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3

28. With reference to SVAMITVA scheme, consider the following statements:

1. It is a centrally sponsored scheme.
2. Ministry of rural development will be the implementing agency.
3. It will enable around one lakh property holders to download their Property Cards through the SMS link delivered on their mobile phone.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 only  
(c) 2 and 3 only (d) 3 only

29. With reference to the Right to Protest, consider the following statements:

1. It is a fundamental right under the Article 21 of the Indian Constitution.
2. These rights are not absolute and are subject to reasonable restrictions.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

30. With reference to Crime in India 2019 report, consider the following statements:

1. It is released by the Law Commission of India.
2. As per the report Uttar Pradesh registered most number of cases against the Scheduled Caste community.
3. The report shows an increase in Crime against Scheduled Tribe community from the year 2018.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3

31. Noumea Accord recently seen in news relates to which of the following:

- (a) It is the name given to free trade agreement signed between India and European Union.
- (b) It provides for referendum to be conducted in New Caledonia for gaining independence from France.
- (c) It is civil nuclear agreement recently conducted between Japan and Taiwan.
- (d) It provides for two state solution between Israel and Palestine.

32. With the reference to the Financial Action Task Force (FATF), consider the following statements:

1. It was founded in 1989 on the initiative of the United Nation to combat money laundering.
2. It also works toward combating terror financing.
3. Its secretariat is located at the OECD headquarters in Paris.
4. India is not the member of the FATF.

Which of the statements given above is/are correct?

- (a) 1 and 4 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2, 3 and 4

33. New Caledonia island lies in which of the following oceans of the world?

- (a) Pacific Ocean (b) Atlantic Ocean  
(c) Arctic Ocean (d) Indian Ocean

34. With reference to NEW START Treaty, consider the following statements:

1. It is signed in 2010 between United States of America and France.
2. It is a successor to the START framework of 1991 (at the end of the Cold War) that limited both sides to 1,600 strategic delivery vehicles and 6,000 warheads.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

35. With reference to " Chapter Proceedings ", consider the following statements:

1. It is a provision in the Code of Criminal Procedure (CrPC) under which police can obtain a bond from a citizen, seeking good behavior.
2. It can be extended for a maximum period of 3 years.
3. There is a need for an FIR against a person for issuing a notice.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 1 and 3 only  
(c) 2 and 3 only (d) 1, 2 and 3

36. With reference to Brahmos Missile, consider the following statements:

1. It is indigeneous cruise missile developed by Defence Research and Development Organization.
2. It can be launched from multiple platforms.
3. It works on Fire and Forget principle.

Which of the statements given above is/are **not** correct?

- (a) 1 and 2 only (b) 3 only  
(c) 2 only (d) 1 only

37. With reference to Freedom of Navigation Operations (FONOP), consider the following statements:

1. FONOP is mechanism to enforce the relevant international laws and customs for ensuring navigation freedom.
2. It is not accepted by United Nations Convention on Law of Seas.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

38. With reference to National Investigation Authority, consider the following statements:

1. It is a non-statutory organization formed in 2008.
2. It acts as the Central Counter-Terrorism Law Enforcement Agency.
3. It is empowered to investigate the crimes across the states without their permission.
4. It comes under administrative control of Ministry of Defence.

Which of the statements given above is/are correct?

- (a) 1 and 4 only (b) 1, 2 and 4 only  
(c) 2, 3 and 4 only (d) 2 and 3 only

39. With reference to Five Eyes Group of Nations, consider the following statements:

1. It is an intelligence alliance comprising of Australia, Canada, New Zealand, United Kingdom and United States of America.
2. India is not part of the alliance.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

40. With reference to Rudram Missile, consider the following statements:

1. It is India's first anti-radiation missile.
2. It is designed to detect, track and attack adversary's radio frequency communication assets.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

41. What does 'Originalism Doctrine' implies in context of judiciary?

- (a) It means that the constitution should be updated with times to encompass changing societal needs.
- (b) It means that judiciary should focus on the text of the Constitution and the founding fathers' intentions in resolving legal disputes.
- (c) It means that the text of constitution of the country shall never be amended.
- (d) It means that while deciding on the legality of the impending case the judges should always give importance to first precedence.

42. With reference to Electoral Bond Scheme, consider the following statements:

1. This scheme was introduced in 2017 as amendment to Representation of Peoples Act 1951.
2. It aims at ushering transparency in political funding of elections.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

43. With reference to Uday Desh ka Aam Nagrik Scheme, consider the following statements:

1. It is regional connectivity scheme by Ministry of Civil Aviation.
2. All air routes under the scheme are awarded through reverse bidding.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

44. With reference to Special Accelerated Road Development Program in North Eastern Region (SARDP-NE), consider the following statements:

1. It is regional road development project in north east region initiated by Department of North Eastern Region.
2. It covers Assam, Arunachal Pradesh and Nagaland.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

45. Poverty and Shared Prosperity Report is released by which of the following?

- (a) World Bank
- (b) World Economic Forum
- (c) International Monetary Fund
- (d) Niti Aayog

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46. With reference to Quad Grouping, consider the following statements:
1. Quad is formal grouping amongst India, USA, Japan and Australia
  2. It was formed to keep Indo-Pacific lanes of communication free from any constraints.
- Which of the statements given above is/are **not** correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
47. With reference to PUSA Decomposer, consider the following statements:
1. The decomposers are in the form of capsules made by extracting fungi strains that help the paddy straw to decompose at a much faster rate than usual.
  2. It is an efficient and effective, cheaper, doable and practical technique to stop stubble burning.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
48. With reference to Ambedkar Social Innovation and Incubation Mission (ASIIM), consider the following statements:
1. It is launched by Niti Aayog.
  2. It is launched under Venture Capital Fund for Scheduled Caste to promote innovation and enterprise among Scheduled Caste students in studying in higher education.
  3. It will provide handholding services but not grant funds.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 2 only
49. With reference to the Domestic Violence Act, consider the following statements:
1. Section 2(s) of the Domestic Violence Act defines "shared property", as the property owned by a woman's husband, or by the joint family of which the husband is a member.
  2. Supreme Court has allowed women to fight domestic violence cases to reside in the 'shared household' even if her husband had no legal right to the house and the same was owned by the father-in-law or mother-in-law.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
50. With reference to the opposition (MARS), consider the following statements:
1. In astronomy, it is the circumstance in which two celestial bodies appear in opposite directions in the sky.
  2. Due to this, Mars will outshine Jupiter, becoming the third brightest object.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
51. Consider the following statements:
1. Thalassemia is an inherited disorder of red blood cells.
  2. In this disorder, there is less oxygen-carrying protein i.e. hemoglobin, and fewer red blood cells in the body than normal.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
52. With reference to District Development Councils, consider the following statements:
1. DDCs have come into existence after amending Jammu and Kashmir Panchayati Raj Act 1989.
  2. These will be set up as new unit of governance in J&K.
  3. They will be placed under Block Development Council.
- Which of the statements given above is/are correct?
- (a) 1 and 3 only (b) 2 and 3 only  
(c) 1,2 and 3 (d) 1 and 2 only
53. With reference to Van Dhan Scheme, consider the following statements:
1. It is an initiative of TRIFED launched in 2018.
  2. Under this multipurpose Van Dhan Kendras are established to promote Minor Forest Produce collected by tribals into the mainstream market.
  3. Self Help Groups are promoted under the initiative.
- Which of the statements given above is/are correct?
- (a) 1 and 3 only (b) 2 and 3 only  
(c) 1, 2 and 3 (d) 1 and 2 only
54. Term One China Policy was recently in news, relation among which regions it talks about?
- (a) China and Japan (b) China and Mongolia  
(c) China and Taiwan (d) China and Pakistan
55. The program titled "Tech for Tribals" was in the news, consider the following statements in this regards:
1. It leads to the holistic development of tribals with a focus on entrepreneurship development, soft skills, IT, and business development.
  2. It is launched by TRIFED under the Ministry of Tribal Affairs.
  3. Under the program, trainees will undergo a 30 days training program over six weeks.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 and 3 only  
(c) 1 and 2 only (d) 1, 2 and 3
56. With reference to the Kaleshwaram Lift Irrigation Project, consider the following statements
1. It is a multi-purpose project constructed on the Kaveri River.
  2. When completed, it will be the world's largest irrigation and drinking water system.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
57. With reference to the Aligarh Movement by Sir Syed Ahmed, consider the following statements:
1. It was a revivalist movement aimed to revive the orthodox Muslim Culture.
  2. It propagated the teachings of Quran and Hadith.
  3. It focused on Hindu-Muslim Unity.
- Which of the statements given above is/are correct?

- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) None of the above
58. With reference to International Labor Organization (ILO), consider the following statements:
1. It was created as part of Treaty of Versailles in 1919 after World War I.
  2. It is also the first specialized agency of United Nations.
  3. It is the only tripartite agency of United Nation that brings together government, workers of member states and employers.
- Which of the statements given above is/are **not** correct?
- (a) 1 and 2 only                      (b) 3 only  
(c) 2 only                                (d) None of the Above
59. With reference to Ayushman Sahakar Scheme, consider the following statements:
1. It is a scheme to assist cooperatives in the creation of healthcare infrastructure in the country.
  2. It is implemented by Ministry of Agriculture.
- Which of the statements given above is/are correct?
- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2
60. Time Use Survey has been released recently, consider the following statements in this respect:
1. It is released for the first time in India.
  2. It is given by Niti Aayog.
- Which of the statements given above is/are **not** correct?
- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2
61. With reference to India Energy Forum, consider the following statements:
1. It is organized by Niti Aayog and Ministry of Petroleum and Natural Gas.
  2. The theme of this edition is "India's Energy Future in a world of Change".
- Which of the statements given above is/are correct?
- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2
62. With reference to the Nitrous Oxide Pollution in India, consider the following statements:
1. The studies show that wastewater contribute to more than 70% of the nitrous oxide pollution in India.
  2. N<sub>2</sub>O has replaced methane as the second-largest greenhouse gas from Indian agriculture.
- Which of the statements given above is/are correct?
- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2
63. With reference to International Barcode of Life, consider the following statements:
1. It is a not for profit organisation.
  2. Barcode 500k program was undertaken by International Barcode of life.
- Which of the statements given above is/are correct?
- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2
64. With reference to the STARS Program, consider the following statements:
1. Its focus is on strengthening the government-managed school education system.
  2. It will be a Central Sector Scheme.
  3. It will be launched under Ministry of Education.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) 1, 2 and 3
65. With reference to Mascarene High, consider the following statements:
1. It is semi-permanent low pressure zone in Pacific Ocean.
  2. It aids in development of strong Indian Monsoon.
- Which of the statements given above is/are correct?
- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2
66. With reference to Global Hunger Index, consider the following statements:
1. It is an annual Report which is jointly published by Concern Worldwide and Welthungerhilfe.
  2. South Asian region has the highest undernutrition and hunger level among world region.
  3. India has a level of hunger that is categorised "serious".
- Which of the statements given above is/are correct?
- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) 1, 2 and 3
67. Earthshot Prize is launched by which of the following:
- (a) World Wide Fund  
(b) UK's Prince William  
(c) IUCN  
(d) World Economic Forum
68. With reference to Paris Deal 2015, consider the following statements:
1. It is an international agreement to combat climate change and to reduce, mitigate greenhouse gas emissions.
  2. It will replace Kyoto Protocol established under United Nation Conference on Climate Change.
- Which of the statements given above is/are correct?
- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2
69. With reference to Kapila Kalam program, consider the following statements:
1. Under this program, students pursuing education in higher educational institutions will get information about the correct system of the application process for patenting their invention.
  2. It was launched on the 89<sup>th</sup> birth anniversary of former President and Scientist Late Dr. APJ Abdul Kalam.
- Which of the statements given above is/are correct?
- (a) 1 only  
(b) 2 only  
(c) Both 1 and 2  
(d) Neither 1 nor 2

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70. Which body releases South Asian Economic Focus report?  
 (a) IMF  
 (b) World Bank  
 (c) New Development Bank  
 (d) Asian Development Bank
71. With reference to Zombie Fires, consider the following statements:  
 1. These are kind of fire which continue for long periods ranging into 50-60 years.  
 2. The presence of ancient carbon rich peat soils under permafrost is a suitable condition for Zombie fire.  
 3. Zombie fire is turning carbon sink into carbon source.  
 Which of the statements given above is/are correct?  
 (a) 1 and 2 only (b) 2 and 3 only  
 (c) 1 and 3 only (d) 1, 2 and 3
72. With reference to Sandalwood Spikes Disease, consider the following statements:  
 1. It is a non-infectious disease caused by phytoplasma.  
 2. Indian researchers have discovered its cure.  
 Which of the statements given above is/are correct?  
 (a) 1 only (b) 2 only  
 (c) Both 1 and 2 (d) Neither 1 nor 2
73. With reference to cotton crop grown in India, consider the following statements:  
 1. Cotton is a rabi crop which requires 6 to 8 months to mature.  
 2. 210 frost free days are must for the crop to grow with perfect cotton balls.  
 3. Cotton can be grown only as tropical crop.  
 Which of the statements given above is/are correct?  
 (a) 1 and 3 only (b) 1 and 2 only  
 (c) 2 and 3 only (d) 2 only
74. With reference to Stockholm Convention on Persistent Organic Pollution, consider the following statements:  
 1. All the member of United Nations are party to this convention.  
 2. Global Environment Facility is designated as interim financial mechanism for the Convention.  
 3. Union Minister of External Affairs have powers to ratify chemicals under the Stockholm Convention.  
 Which of the statements given above is/are correct?  
 (a) 1 and 2 only (b) 2 and 3 only  
 (c) 1 and 3 only (d) 1, 2 and 3
75. With reference to Hydrogen Compressed Natural Gas (HCNG), consider the following statements:  
 1. It is a mixture of compressed natural gas and about 50%percent hydrogen by energy.  
 2. HCNG reduces hydrocarbon emissions by up to 70%.  
 Which of the statements given above is/are correct?  
 (a) 1 only (b) 2 only  
 (c) Both 1 and 2 (d) Neither 1 nor 2
76. With reference to Thalassemia Bal Sewa Yojana, consider the following statements:  
 1. It is a Coal India CSR funded Hematopoietic Stem Cell Transplantation (HSCT) program.  
 2. It aims to provide a one-time cure opportunity for Haemoglobinopathies like Thalassaemia and Sickle Cell Disease.  
 Which of the statements given above is/are correct?  
 (a) 1 only (b) 2 only  
 (c) Both 1 and 2 (d) Neither 1 nor 2
77. Global Environment Facility is **not** a financial mechanism for which of the below given environmental conventions:  
 (a) UNFCC  
 (b) Minamata Convention on Mercury  
 (c) UNCCD  
 (d) International Solar Alliance
78. Bishkek declaration is concerned with the conservation of which of the below given animal?  
 (a) Lion (b) Tiger  
 (c) Snow leopard (d) Red Panda
79. With reference to Indian Meteorological Department, consider the following statements:  
 1. It was established after the Green Revolution.  
 2. It is an agency of the Ministry of Earth Sciences of the Government of India.  
 Which of the statements given above is/are correct?  
 (a) 1 only (b) 2 only  
 (c) Both 1 and 2 (d) Neither 1 nor 2
80. With reference to Hing cultivation in India, consider the following statements:  
 1. Hing is cultivated only in Andhra Pradesh in India.  
 2. It thrives well in tropical conditions.  
 Which of the statements given above is/are correct?  
 (a) 1 only (b) 2 only  
 (c) Both 1 and 2 (d) Neither 1 nor 2
81. With reference to asteroids found in solar system, consider the following statements:  
 1. The asteroid belt is found in solar system between Jupiter and Saturn.  
 2. Asteroids are rocky objects that orbit the Sun.  
 3. They are also called minor planets.  
 Which of the statements given above is/are correct?  
 (a) 1 and 2 only (b) 2 and 3 only  
 (c) 1 and 3 only (d) 1, 2 and 3
82. Consider the following pairs with reference to space missions:  
 1. Juno — To study Jupiter and its gravitational and magnetic fields  
 2. OSIRIX-Rex — To retrieve a sample of an asteroid  
 3. New Horizon Mission — To visit Saturn's moon, Titan  
 4. Dragonfly — To obtain a close look at Pluto and its moons

Which of the pairs given above is/are correctly matched?

- (a) 1 and 3 only                      (b) 1, 2 and 3 only  
(c) 2 and 3 only                      (d) 1 and 2 only

83. With reference to Cannabidiol, consider the following statements:

1. Cannabidiol (CBD) is a chemical present in the cannabis plant, which is also known as marijuana.
2. CBD oil is made by extracting CBD from the cannabis plant by diluting it with a carrier oil like coconut or hemp seed oil.
3. CBD oil is manufactured under a license issued by the Drugs and Cosmetics Act, 1940 can be legally used.

Which of the statements given above is/are correct?

- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) 1, 2 and 3

84. With reference to Xoo infection, consider the following statements:

1. It is caused in rice plants by Xoo bacteria
2. Xoo may easily spread through the water from infected plants.
3. Wind may also help spread the Xoo bacteria to other crops and rice paddies.

Which of the statements given above is/are correct?

- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) 1, 2 and 3

85. With reference to the Gujarat Disturbed Areas Act, consider the following statements:

1. Collector can notify a particular area of a city or town as a "disturbed area".
2. The transfer of immovable property in the disturbed area can take place only after the Collector expressly signs off on an application made by the buyer and the seller of the property.

Which of the statements given above is/are correct?

- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2

86. With reference to the Cat Que virus (CQV), consider the following statements:

1. It belongs to the Simbu serogroup virus of the genus Orthobunyavirus.
2. It is zoonotic in nature which infects both humans and livestock species.

Which of the statements given above is/are correct?

- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2

87. With reference to Himalayan Chandra Telescope, consider the following questions:

1. It is an optical infrared telescope.
2. It comes under Ministry of Earth Sciences.
3. It is placed in Kochi, Kerala.

Which of the statements given above is/are correct?

- (a) 1 only                                (b) 2 only  
(c) 1 and 2 only                      (d) 1, and 3 only

88. With reference to Uniform Code of Pharmaceutical Marketing Practices, consider the following statements:

1. It is a code issued by the Department of Pharmaceuticals relating to marketing practices for pharmaceutical companies as well as the medical devices industry.

2. It is mandatory for pharmaceutical companies.

Which of the statements given above is/are correct?

- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2

89. With reference to Astrosat, consider the following statements:

1. It is India's first dedicated multi-wavelength space telescope.
2. It has made India the 6th nation to have a space observatory.
3. It was launched on GSLV-Mk-II rocket.

Which of the statements given above is/are correct?

- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) 1, 2 and 3

90. With reference to Jnanpith Award, consider the following statements:

1. It is one of the highest literary award in the country.
2. The Award is open for Indian and foreign citizens.
3. Only Indian languages are considered for the award.

Which of the statements given above is/are correct?

- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) 1 only

91. With reference to National Super Computing Mission, consider the following statements:

1. It was launched in 2015 and will be implemented through C- DAC, Pune and IISc Bengaluru.
2. Param Brahma is the first super computer under National Super Computing Mission.
3. Mission supports the government's vision of 'Digital India' and 'Make in India' initiatives.

Which of the statements given above is/are correct?

- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) 1, 2 and 3

92. Recently launched Ghar Tak Fibre scheme is associated with which of the following state?

- (a) Assam                                (b) Jharkhand  
(c) Madhya Pradesh                      (d) Bihar

93. With reference to Euthanasia in India, consider the following statements:

1. Supreme Court has permitted the withdrawal of medical support if the patient slip into medically irretrievable conditions such as irreversible coma.
2. Both active and passive euthanasia are permitted in India.

Which of the statements given above is/are correct?

- (a) 1 only                                (b) 2 only  
(c) Both 1 and 2                      (d) Neither 1 nor 2

94. With reference to recent study about Indus valley civilization, consider the following statements:

1. It has suggested the use of dairy products in the civilization.
2. Study team has used molecular analysis technique.

Which of the statements given above is/are correct?



## Subjective Questions

### GS Paper-I

1. Sir Syed Ahmed's work in the Political and Social spheres had both desirable and undesirable consequences. Critically examine. (10)
2. Indus Valley Civilization has an enormous influence on the contemporary lifestyles of Indians, especially in the north. Do you agree? (10)

### GS Paper-II

3. What is Jammu and Kashmir's Public Safety Act? Discuss its rationale and major criticism. (10)
4. Is the right to protest unequivocally justified under all circumstances? How is it related to the fundamental right regarding freedom of speech and expression? (10)
5. Electoral Bonds are alleged to be a double-edged sword. Critically evaluate their relevance and the potential for misuse in a certain manner. What can be the solution?(10)
6. To develop the scientific temper, there is a dire need to provide shining role models that inspire others to follow in their lead. What, as per your understanding, is preventing women in India to become such role models in the field of scientific research? (15)
7. United Nations Human Rights Council (UNHRC) is a beacon of hope for all humanity. What challenges are plaguing its functioning? (10)
8. India's role in the Indian Ocean is unambiguously decided by its relation with the littoral and island nations in the region. Evaluate India Maldives relationship amid changing power dynamics in the Indian Ocean Region. (15)
9. United Nations must retain its relevance in times to come. Analyse the issues associated with the functioning of the UN, with special emphasis on the UN Security Council.(10)
10. Myanmar can act as the key to India's entry into South East Asia and manifesting its Act East Policy. Critically evaluate. (15)
11. Australia lies at the meeting point of two great oceans. Highlight the significance of Australia joining groupings and exercises centered around the Indian Ocean. (15)

### GS Paper-III

12. What is Gene Editing? Why some sections of society are vehemently opposed to its application on Humans? What is your stand on the matter? (15)
13. Agricultural produce is one item where market reforms have had little impact. In light of the recent efforts to allow farmers to sell their produce outside registered 'mandis', analyze what can be the impact of allowing market forces to determine the price of agricultural commodities in India? (15)
14. Contract Farming is one area whose benefits are vocally presented to outnumber its challenges. Examine the statement in light of the recent efforts to enable farmers to enter into contracts with downstream players. (15)
15. The definition of essential commodities keeps on changing with time. Do you agree? What changes are needed in the present setup for essential commodities laws in India? (10)
16. Highlight the issues plaguing the Minimum Support Price (MSP) regime. What is the rationale for continuing the scheme in present times? (15)
17. What is the current status of subsidy on fertilizers in India? What are related concerns and issues associated with fertilizer subsidy? Comment on the possible future course of action. (15)
18. Despite innumerable initiatives taken by the Government, the problem of air pollution looms like an insurmountable challenge. Critically evaluate the relevant efforts made in this direction. (15)
19. Integrated Theatre Command is an inevitable necessity with many challenges before its implementation in letter and spirit. Comment. (10)

### GS Paper-IV

20. Right to life tacitly includes the Right to Die. Do you agree? Discuss the ethical concerns associated with Euthanasia. What is your opinion on the matter? (10)

■■■■

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