

# OFFICERS' Pulse

APRIL, 2022

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**CURRENT AFFAIRS Monthly**  
THE **PULSE** OF UPSC AT YOUR FINGER TIPS.

# Contents

<b>Schemes.....</b>	<b>2</b>	3) Near Field Communication .....	27
1) Pradhan Mantri Mudra Yojana .....	2	4) Solid Fuel Ducted Ramjet .....	28
2) RoDTEP scheme .....	2	5) W Boson.....	29
3) PMJJBY & PMSBY.....	3	<b>Reports and Indices.....</b>	<b>31</b>
<b>Initiatives.....</b>	<b>5</b>	1) CAG report on Aadhaar .....	31
1) Postal Ballots for NRIs .....	5	2) Top Military Spenders-2021 .....	32
2) How will cardless cash withdrawal system at ATMs work? .....	7	<b>Polity.....</b>	<b>33</b>
3) Fortified rice .....	8	1) Citizenship (Amendment) Act, 2019.....	33
4) Positive Indigenisation List .....	9	2) National Commission for Protection of Child Rights .....	34
<b>Environment.....</b>	<b>11</b>	3) Anti-Defection Law .....	35
1) How quickly can India move away from coal?.....	11	4) The Criminal Procedure (Identification) Bill, 2022 .....	36
2) Cutting Carbon Emissions not enough.....	12	5) National Food Security Act .....	38
<b>Agriculture .....</b>	<b>15</b>	<b>International Relations.....</b>	<b>40</b>
1) Palm Oil.....	15	1) South China Sea dispute.....	40
2) Formation and Promotion of FPOs.....	15	2) Raisina Dialogue.....	43
<b>Economy.....</b>	<b>17</b>	3) Fishing for workable solutions in the Palk Bay .....	43
1) Govt. amends rules governing Nidhi companies .....	17	<b>Art and Culture.....</b>	<b>46</b>
2) Foreign Exchange Reserve .....	17	1) Sangeet Natak and Lalit Kala Akademi Awards .....	46
3) India-Australia trade agreement... ..	19	2) Guru Tegh Bahadur .....	47
4) Standing Deposit Facility.....	20	2) Prehistoric Settlement at Attappadi.....	47
<b>Organisations .....</b>	<b>22</b>	<b>Defence.....</b>	<b>48</b>
1) Countries will have to 'justify' veto votes at UN .....	22	1) iDEX Prime .....	48
2) Asian Development Bank .....	23	2) INS Vagsheer .....	48
3) G7 nations .....	24	<b>Miscellaneous .....</b>	<b>50</b>
4) UNHRC .....	24	1) Healthcare as an Optional Public Service.....	50
<b>Science and Technology .....</b>	<b>26</b>	2) Global Network of Silk Cities.....	51
1) GAGAN .....	26	3) The functioning of the Enforcement Directorate .....	52
2) H3N8 Bird Flu .....	27		

# Schemes

## 1) Pradhan Mantri Mudra Yojana

### About the scheme

- Pradhan Mantri Mudra Yojana (PMMY) is a flagship scheme of Government of India to “**fund the unfunded**” by bringing such enterprises to the formal financial system and extending affordable credit to them.
- Launched in 2015 to promote entrepreneurship, PMMY provides loans upto **Rs. 10 lakh to the non-corporate, non-farm small/micro enterprises.**
- Under PMMY collateral free loans of upto Rs. 10 Lakh are extended by **Member Lending Institutions (MLIs)** viz Scheduled Commercial Banks, Regional Rural Banks (RRBs), Small Finance Banks (SFBs), Non Banking Financial Companies (NBFCs), Micro Finance Institutions (MFIs) etc.
- The loans are given for **income generating activities in manufacturing, trading and services sectors and for activities allied to agriculture.**
- Mudra loans are offered in three categories namely, ‘**Shishu**’, ‘**Kishore**’ and ‘**Tarun**’ which signifies the stage of growth or development and funding needs of the borrowers:-
  - **Shishu** : covering loans upto Rs. 50,000/-
  - **Kishore** : covering loans above Rs. 50,000/- and upto Rs. 5 lakh
  - **Tarun** : covering loans above Rs. 5 lakh and upto Rs. 10 lakh
- With an objective to promote entrepreneurship among the new generation aspiring youth, it is ensured that **more focus is given to Shishu Category loans and**

**then Kishore and Tarun categories.**

### Why in News?

- Finance Minister Nirmala Sitharaman has said that more than **51 percent of total loans sanctioned under the Pradhan Mantri Mudra Yojana went to Scheduled Caste, Scheduled Tribe, and Other Backward Class categories.**
- **Around 68 percent of loans sanctioned to Women Entrepreneurs and 22 percent of the loans have been given to new entrepreneurs** who had not availed of any loan since the inception of the Scheme.

## 2) RoDTEP scheme

### Background

- Merchandise Exports from India Scheme (MEIS) was introduced under **Foreign Trade Policy of India (FTP 2015-20)**, as a part of Exports from India Scheme.
- The scheme provides **incentive in the form of duty credit scrip** to exporters to compensate for their losses on payment of duties. The scrips can be transferred or used for payment of a number of duties including the basic customs duty.

### Dispute in WTO

- In 2019, a World Trade Organization (WTO) dispute resolution panel ruled that MEIS was **not in compliance with the global trade norms.**
- Additionally, many exporters had persistently complained that the MEIS scheme doesn't offset all the taxes.

### RoDTEP scheme

- To address these issues, the government has introduced the **Remission of Duties and Taxes**

**on Exported Products (RoDTEP) scheme** with a view to give a boost to the country's outbound shipments.

- This new scheme **reimburses currently un-refunded Central, State, and Local taxes and duties** incurred in the process of manufacture and distribution of exported products in a way that is **compliant with the WTO norms**.
- It aims to provide a level playing field to domestic industry abroad.
- Major components of taxes covered are **electricity duty, value-added tax (VAT) on fuels used in transportation/ distribution, mandi tax, stamp duty, etc.**
- It may be noted that rebate under the Scheme shall not be available in respect of duties and taxes already exempted or remitted or credited.

#### Why in News?

- The Ministry of Commerce and Industry has announced guidelines and rates of the RoDTEP scheme for 8555 export items for a cost of ₹12500 crore to the exchequer.
- Though the scheme for exporters which replaced the ongoing Merchandise Exports from India Scheme (MEIS) came into effect on 1 January, the rates had not been finalized yet.
- The RoDTEP rates will vary from **0.5-4.3% of export value** and will include sectors like marine, agriculture, leather, gems and jewellery, automobile, plastics, electrical, electronics and machinery.
- However, **exporters in sectors like steel, pharmaceuticals, chemicals have been kept out of the scheme. Products manufactured or exported at export-oriented units and special economic zones have**

been **excluded** from the scheme for the time being.

#### Mechanism

- RoDTEP has created a mechanism to reimburse such central, state and local taxes, which are not being refunded under any other scheme. The refund would be credited to an exporter's ledger account with the customs, and will be used to pay basic customs duty on imported goods.
- The **credits can also be transferred to other importers**. The rebate will have to be claimed as a percentage of the Freight On Board value of exports.
- A **monitoring and audit mechanism**, with an information technology-based risk management system, has been put in place to physically verify the records of the exporters.

### 3) PMJJBY & PMSBY

#### About PMJJBY

- **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)** is a one-year **life insurance scheme** renewable from year to year offering **coverage for death due to any reason**.

#### Eligibility:

- Individuals in the **age group of 18-50 years** having a savings bank or a post office account are entitled to enroll under the scheme.
- People who join the scheme before completing 50 years of age can continue to have the risk of life covered up to **age of 55 years** upon payment of premium.

#### Benefits:

- **Life cover of Rs. 2 Lakh** in case of death due to any reason against a **premium of Rs. 330/- per annum**.

#### About PMSBY

- **Pradhan Mantri Suraksha Bima Yojana (PMSBY)** is a one-year

**accidental insurance scheme** renewable from year to year offering coverage for death or disability due to accident.

**Eligibility:**

- Individuals in the **age group of 18-70 years** having a savings bank or a post office account are entitled to enroll under the scheme.

**Benefits:**

- Accidental death cum disability cover of **Rs.2 lakh (Rs.1 lakh in case of partial disability) for death or disability due to an accident.**

**Why in News?**

- The cumulative enrolments under Pradhan Mantri Jeevan Jyoti Bima Yojana and Pradhan Mantri Suraksha Bima Yojana have crossed 12 crore and 28 crore respectively

## Initiatives

### 1) Postal Ballots for NRIs

#### Context

- Chief Election Commissioner Sushil Chandra recently said that the extension of Electronically Transmitted Postal Ballot System (ETPBS) facility to overseas voters is being contemplated.
- The EC had written to the Law Ministry in 2020 proposing NRIs be allowed to vote through postal ballots, following which the matter has been under consideration by the government.

#### How can overseas voters currently vote in Indian elections?

- **Prior to 2010**, an Indian citizen who is an eligible voter and was residing abroad for more than six months owing to employment, education or otherwise, **would not have been able to vote** in elections. This was because the NRI's name was deleted from electoral rolls if he or she stayed outside the country for more than six months at a stretch.
- After the passing of the **Representation of the People (Amendment) Act, 2010**, eligible NRIs who had stayed abroad beyond six months have been **enabled to vote, but only in person at the polling station where they have been enrolled as an overseas elector**.
- Yet, the provision of having to visit the polling booth in person has discouraged eligible voters from exercising their mandate. Only a **very low proportion** of eligible overseas residents actually registered or turned up to vote.

#### What is the current strength of NRI voters?

- According to a UN report, **India's diaspora population is the**

**largest in the world** at 18 million people.

- As of now there are only 1.12 lakh registered overseas electors.

#### Government's proposal

- In 2017, the government **proposed to remove the restriction imposed by Section 20A of the Representation of the People Act**, which required them to be physically present to vote in their constituencies.
- The Bill provided for overseas voters to be able to **appoint a proxy to cast their votes on their behalf**, subject to conditions laid down in the Conduct of Election Rules, 1961. The Bill was later passed in 2018, but **lapsed with the dissolution of the 16th Lok Sabha**.
- Now the ECI has approached the government to permit NRIs to vote via postal ballots similar to a system that is already used by service voters (**the Electronically Transmitted Postal Ballot System, or ETPBS**).

#### What is ETPBS and how does it function?

- The Electronically transmitted Postal Ballot System is developed by **Election Commission of India** with the help of **Centre for Development of Advanced Computing (C-DAC)**, for the use of the **Service Voters**.
- It is a fully secured system, having **two layers of security**. Secrecy is maintained through the use of **OTP and PIN** and no duplication of casted Electronically Transmitted Postal Ballot (ETPB) is possible due to the **unique QR Code**.
- The developed System is implemented **inline with the existing Postal Ballot System**.

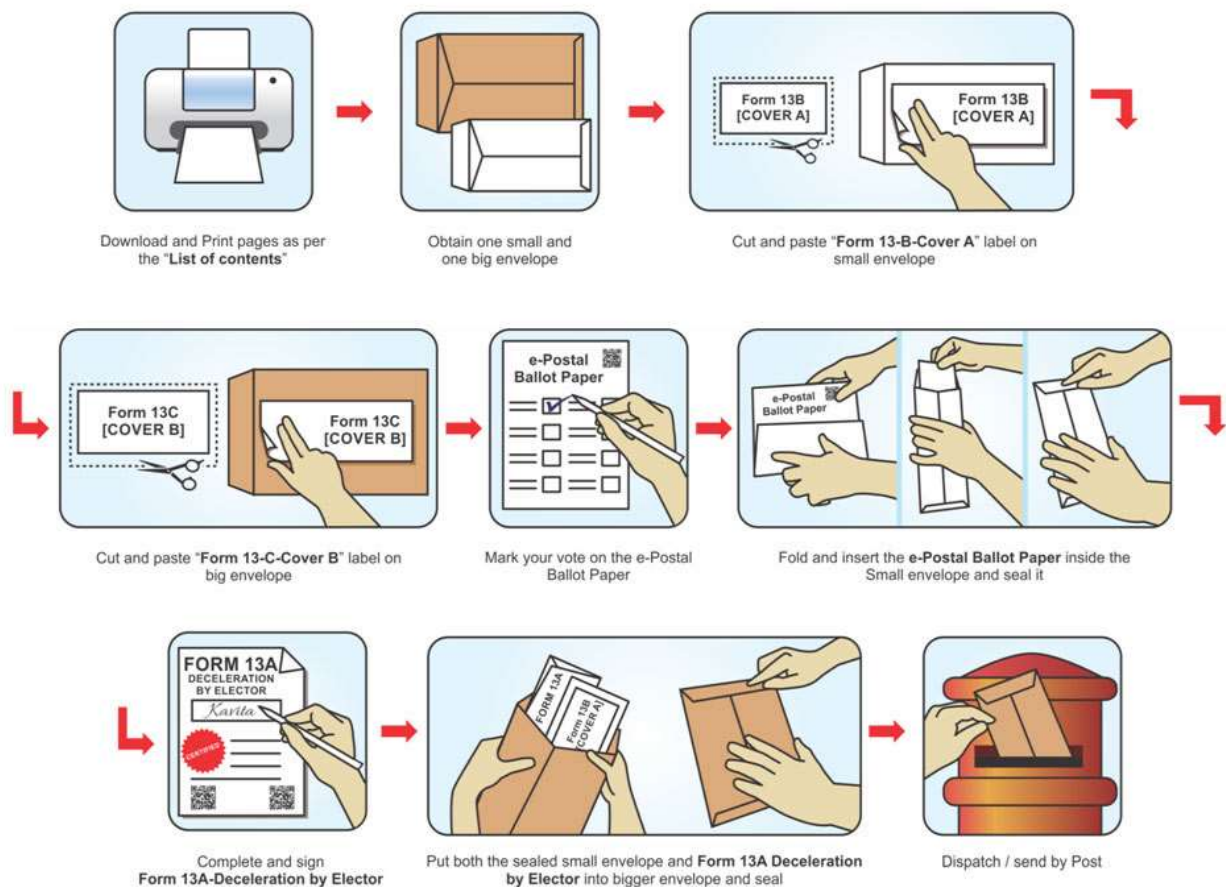


This system enables the entitled service voters to cast their vote using an **electronically received postal ballot from anywhere outside their constituency**. The voters who make such a choice will be entitled for the Postal Ballot delivered through Electronic Media for a particular election.

- The service voter can then download the ETPB, register their

mandate on the ballot and send it to the returning officer of the constituency via ordinary mail. The postal ballot **must reach the returning officer by 8 a.m. on the day of the counting of results**.

- This system would be an easier option of facilitating voting by the electors as the time constraint for dispatch of postal ballot has been addressed using this system.



- The **Conduct of Election Rules, 1961** was **amended in 2016** to allow service voters to use the ETPBS.
- This facility is **now available for service voters** (being a member of the armed Forces of the Union; or a member of a force to which provisions of the Army Act, 1950; a member of an Armed Police Force of a State, and serving outside that State; or a person who is employed under the Government of India, in a post outside India) and the ECI now

proposes to extend this facility to overseas voters as well. For this to commence, the Law Ministry has to amend the Conduct of Election Rules, 1961.

### Are postal ballots a viable means of voting?

- The ETPBS method **allowed for greater turnout among service voters**.
- With increasing mobility of citizens across countries for reasons related to work, the postal ballot method has been recognised by the

**International Institute for Democracy and Electoral Assistance** (an intergovernmental organisation that works to support democratic processes and institutions) as a means to allow overseas voters to exercise their right, subject to certain conditions normally related to the time spent abroad or the work carried out abroad.

- Postal ballots were proven to be a **secure and an easy way** of registering the mandate in the presidential elections in the United States recently with many voters preferring to use this method due to the COVID-19 social distancing norms.
- A postal ballot mechanism that allows for **proper authentication of the ballot** at designated consular/embassy offices and an effective postal system should ease this process for NRIs, but the rules must be clearly framed for eligibility on the basis of time spent away from the country.

## 2) How will cardless cash withdrawal system at ATMs work?

### Context

- Recently, the Reserve Bank of India (RBI) announced **cardless cash withdrawals at ATMs** in the country. The feature will let consumers use **Unified Payment Interface (UPI)** on their smartphones to withdraw cash from ATMs.

### How will this system work?

- Cardless cash withdrawals are to be **authenticated via UPI**. So, ATMs are expected to show an option for withdrawing cash using UPI. Once an user selects this option, they can input the amount to be withdrawn.

- A **QR code** will be generated on the ATM. Users will then need to scan that code via their UPI app, and enter **password** to withdraw cash from the ATM.
- Until now, only fund transfers between accounts were enabled via UPI. With this option, consumers can take cash out from ATMs without a card.

### What issues does this tech solve?

- According to the RBI, cardless cash withdrawals will **enhance security of cash withdrawal transactions**. Besides, it would help **prevent frauds like card skimming and card cloning**.
- Currently, only existing customers of a few banks are allowed to withdraw cash without cards, and from specific bank's ATM networks. However, RBI's move to allow interoperability in cardless withdrawals will enable users to take cash from any bank's ATM.

### What is card skimming?

- **Criminals steal data from credit or debit cards by tracking a card swiped at ATMs**. They pick this information from using a skimming device that **reads the card's magnetic strip**. These devices are surreptitiously installed on ATMs. And once the device picks up the data, it can be used to gain unauthorised access to the user's banking records.
- The stolen information can be **coded onto a new card**, a process called **cloning**, and be used to make payments and transact with other bank accounts. Problematic ATMs that function intermittently, and the ones located in isolated areas are often used to install such skimming devices.
- Fraudsters also install **scanning devices on point of sale machines**. These devices can



stealthily scan a card before it is swiped at the payment counter at a departmental store. This is especially tough to spot if the billing counter is not in the line of sight of the card owner.

- These devices are difficult to identify as they appear to be a legitimate part of an existing ATM, or like a regular in-store card reader. It is skilfully fitted to the payment machines.

### Limitations and Challenges

- Currently, ICICI Bank, Kotak Mahindra Bank, HDFC Bank and SBI allow cardless cash withdrawals for their users. But, **accessing the feature is cumbersome.**
- In cardless withdrawal, the **security vulnerability of a card is minimised, but the risk will soon transfer to a mobile-enabled feature.** The mobile can now become the epicentre of transactions, making it the next target for the fraudsters.

## 3) Fortified rice

### What's in the news?

- The Cabinet Committee on Economic Affairs has accorded its approval for supply of fortified rice throughout the Targeted Public Distribution System, Integrated Child Development Services, Pradhan Mantri Poshan Shakti Nirman-PM POSHAN and Other Welfare Schemes in all States and Union Territories by 2024. It will be implemented in a phased manner.
- Fortifying rice involves **grinding broken rice into powder, mixing it with nutrients, and then shaping it into rice-like kernels using an extrusion process.** These fortified kernels are then mixed

with normal rice in a **1:100 ratio**, and distributed for consumption.

- According to FSSAI norms, 1 kg of fortified rice will contain the following: **iron** (28 mg-42.5 mg), **folic acid** (75-125 microgram), and **vitamin B-12** (0.75-1.25 microgram).
- Rice may also be fortified with **zinc, vitamin A, vitamin B-1, vitamin B-2, vitamin B-3 and vitamin B-6.**

### What is Fortification of Food?

- Fortification is the **addition of key vitamins and minerals** such as iron, iodine, zinc, Vitamin A & D to staple foods such as rice, milk and salt to improve their nutritional content. These nutrients may or may not have been originally present in the food before processing.

### Why does rice have to be fortified?

- India has very high levels of malnutrition among women and children. According to the Ministry of Consumer Affairs, Food and Public Distribution, **every second woman in the country is anaemic and every third child is stunted.**
- Fortification of food is considered to be one of the most suitable methods to combat malnutrition.
- Rice is one of India's staple foods, consumed by about two-thirds of the population. Per capita rice consumption in India is 6.8 kg per month. Therefore, fortifying rice with micronutrients is an option to supplement the diet of the poor.

### What are the benefits of Fortification?

- Since the nutrients are added to staple foods that are widely consumed, this is an excellent method to improve the health of a large section of the population, all at once.
- Fortification is a safe method of improving nutrition among people. The addition of micronutrients to

food **does not pose a health risk to people**. The quantity added is so small and so well regulated as per prescribed standards that likelihood of an overdose of nutrients is unlikely.

- It **does not require any changes in food habits and patterns of people**. It is a socio-culturally acceptable way to deliver nutrients to people.
- It **does not alter the characteristics of the food**—the taste, the feel, the look.
- It can be **implemented quickly** as well as show results in improvement of health in a relatively short period of time.
- This method is **cost-effective** especially if advantage is taken of the existing technology and delivery platforms. The **Copenhagen Consensus** (a US non-profit think tank) estimates that every 1 Rupee spent on fortification results in 9 Rupees in benefits to the economy.

#### Food Fortification in India

- In 2016, FSSAI operationalized the **Food Safety and Standards (Fortification of Foods) Regulations, 2016** for fortifying staples namely
  - **Wheat Flour and Rice with Iron, Vitamin B12 and Folic Acid,**
  - **Milk and Edible Oil with Vitamins A and D and**
  - **Double Fortified Salt with Iodine and Iron**
- The **‘+F’ logo** has been notified to identify fortified foods.

#### 4) Positive Indigenisation List

##### What's in the news?

- The Defence Ministry has notified the **3rd positive indigenisation list of 101 equipment and platforms, which the Services can**

**procure only from the domestic industry.**

- The list includes naval utility helicopters, light tanks, small Unmanned Aerial Vehicles, anti-ship missiles among others.

##### What is a Positive Indigenisation List?

- As part of efforts to **boost the domestic defence industry and promote defence exports**, in 2020, the government notified the **first positive indigenisation list** (also known as **negative import list**) of 101 items and in 2021 notified the second one, comprising 108 items.
- The positive indigenisation list essentially means that the Armed Forces—Army, Navy and Air Force, will only **procure such items from domestic manufacturers**.
- The manufacturers could be private sector players or Defence Public Sector Undertakings (DPSUs).
- Since the announcement of the lists, contracts worth ₹54,000 crore have been signed for domestic procurement and orders worth ₹4.5 lakh crore were expected to be placed in the next 5 to 7 years.

##### Significance

- Not only does the list **recognise the potential of the local defence industry**, it will also **invigorate impetus to domestic Research and Development** by attracting fresh investment into technology and manufacturing capabilities.
- The list also provides an **excellent opportunity for ‘start-ups’ as also Micro, Small and Medium Enterprises (MSMEs)**.
- The government wants to reduce the **dependence on imported items** in defence and promote the domestic defence manufacturing industry.
- By denying the possibility of importing the items on the negative

list, the domestic industry is given the opportunity to step up and manufacture them for the needs of the forces.

- This will boost indigenisation of defence production and is in line with the **government's target to reach a turnover of USD 25 billion by 2025 through**

**indigenously manufactured defence products.**

- It is a big step towards self-reliance in defence under the **Atmanirbhar Bharat initiative.**

# Environment

## 1) How quickly can India move away from coal?

### Context

- Recently, Chief Ministers of several states wrote to Prime Minister Narendra Modi regarding the coal shortage in their respective states. Decline in coal stocks and the resulting power outages in several States have spurred queries of renewable energy's potential to fill in for the conventional resource.
- Coal stocks in more than 100 thermal power plants in India have fallen below the critical mark (less than 25% of the required stock) while it was less than 10% in over 50 plants across India.

### Is there a coal crisis?

- **Coal accounts for 55% of the country's energy needs.** The India Energy Outlook 2021 report of the International Energy Agency (IEA) said energy use in India has doubled since 2000, with **80% of demand still being met by coal, oil and solid biomass.**
- **Pandemic-related disruptions,** however, prevented the stock-up of coal. Mining operations were halted to curb the spread of the virus. Despite the gradual easing into operations, mining activities were hampered during the monsoons, delaying arrival of stocks.
- With household demand for power picking up and the arrival of summer, combined with the sudden acceleration in economic activity, it has resulted in a **demand-supply mismatch.**
- The energy demand will go up as urbanisation and the population increase. The IEA estimates that despite the shock from COVID-19,

India's demand is expected to grow by almost 5% a year till 2040.

### What is the consumption pattern?

- **Coal is abundantly available, has shorter gestation periods** and coal-based plants have **lower capital costs** than hydel and nuclear plants, therefore, making it the **most viable enabler of energy security in the country.**
- The conventional resource's capacity addition is further helped by the increased **participation of the private sector in power generation.**

### Where does India stand on renewable energy sources?

- The report of the **Central Electricity Authority** on optimal generation capacity mix for 2029-30 estimates that the **share of renewable energy in the gross electricity generation is expected to be around 40%** by that financial year.
- A total of **152.90 GW of renewable energy capacity** has been installed in the country as on February 28. This includes 50.78 GW from solar power, 40.13 GW from wind power, 10.63 GW from bio-power, 4.84 GW from small hydel power and 46.52 GW from large hydel power.
- In accordance with the Prime Minister's announcement at **COP26**, the Ministry of New and Renewable Energy aspires to **install 500 GW of electricity capacity from non-fossil fuel sources by 2030.**

### What are the challenges?

- The capacity of a plant does not necessarily translate into the actual power it generates for the grid, **some of it is lost owing to external factors such as heat or**

**transmission losses.** This applies for **both renewable and conventional sources.**

- Solar and wind energy are variable resources with **'variability'** being particularly exposed during periods of peak demand. For example, solar energy is abundantly available during daytime in summers. However, domestic consumption peaks in the evenings. With no sunlight outside then, energy requirements and supply face a mismatch. Another dimension to it is the **seasonal variation.** In monsoons, solar energy is barely available with wind energy available in abundance.
- Another factor is **spatial variability.** Regions near coastal areas enjoy more wind and therefore, possess greater ability to produce wind energy, like Gujarat, in comparison to States which are drier and experience more sunlight, like Rajasthan. Use of renewable energy, therefore, would essentially require a **balancing act.**

### Transmission and Storage

- Transmission and storage are central to addressing variability issues. They help cope with the **'duck curve' power demand** among consumers in India. Resembling a duck, the curve is a graphical representation **exhibiting the difference between the demand and availability of renewable energy through the day.** For instance, When the sun is shining, solar floods the market and then drops off as electricity demand peaks in the evening.
- With both wind and solar being variable sources — it becomes imperative to establish a

**complementing model.** This would require import and export technologies between States as well as optimising the trade between those with differing demand and production profiles.

- For instance, thermal plants in the eastern region provide flexibility for demand centres to the south and west, which have high industrial and agricultural loads and may call on imports during periods of low renewables availability.
- Another issue is that **India's national infrastructure has not been designed to account for so much variability in energy generation.** The grid is accustomed to consistent supply from thermal power plants, which is diametrically opposed to the erratic generation from solar-PV, wind turbines, and other renewables.

### Inculcating energy-efficient behaviour

- Transition to renewable energy would depend a lot on **inculcating energy-efficient behaviour** and opting for **energy-efficient products.**
- A **demand response programme** in the direction would help address such issues keeping external factors constant. Further, lifestyle changes to reduce energy demand too would be essential; an example here could be **Japan's 'Cool Biz Campaign'** permitting employees to wear light and casual clothes at work instead of the conventional jackets and tie in order to reduce the need for air-conditioning.

## 2) Cutting Carbon Emissions not enough

### What's the news?

- IPCC has recently released a report highlighting that to save the world

from the worst ravages of climate change, **slashing carbon pollution is no longer enough – CO2 will also need to be sucked out of the atmosphere and buried.**

#### News in detail

- The latest IPCC Report states that even under the most aggressive carbon-cutting scenarios, **several billion tonnes of CO2 will need to be extracted each year from the atmosphere by 2050.**
- Emissions climbed another 20% to more than **40 billion tonnes of CO2 in 2021.** This means an **abrupt drop in carbon emissions of six or seven percent a year** is needed to avoid breaching the **Paris climate treaty's goal** of capping global warming at **"well below" two degrees Celsius** compared to pre-industrial levels.
- As of today, however, CO2 removal is nowhere near these levels. Hence, the **need for carbon dioxide removal (CDR), or "negative emissions"**, is likely to figure out the problem.

#### What are different Carbon dioxide removal (CDR) Techniques?

- There are at least a dozen CDR techniques on the table, with different potentials and costs which are as follows:

##### 1. Using Bioenergy

- Most of the hundreds of models laying out a game plan for a liveable future reserve an important role for a negative emissions solution called **BECCS, or bioenergy with carbon capture and storage.**
- Eg: Grow trees, burn them for energy, and bury the CO2 underground, in an abandoned mineshaft.

##### 2. Planting Trees

- **Restoring forests and planting trees that absorb and stock CO2**

as they grow also figure prominently in development scenarios achieving net-zero emissions, whether in 2050 or later.

- But the **amount of land** needed to put a serious dent in CO2 levels through tree planting is up to **twice the size of India** and could clash with other priorities, such as growing food and biofuel crops.
- **Biodiversity could suffer** as well, especially in savannahs converted to monoculture tree farms. Newly planted forests could also fall victim to wildfires made more frequent and intense by rising temperatures, resulting in the release of all their stored CO2.

##### 3. Direct Air Carbon Capture and Sequestration (DACCS)

- DACCS is a **chemical process that extracts carbon dioxide directly from the atmosphere, converting it into a solid form or locking it away underground.**
- Because CO2 in the air is so sparse, a few hundred parts per million it is a very **energy-intensive and expensive process.**

##### 4. Enhanced Weathering

- Enhanced weathering involves **mining and crushing rocks rich in minerals that naturally absorb CO2, and then spreading them over land or sea.**
- It aims to vastly accelerate a process that normally unfolds on geological timescales of tens of thousands of years.
- **Silicate rocks** with minerals rich in calcium and magnesium but lacking metal ions such as nickel and chromium are the best raw material for the job.

##### 5. Ocean-based Methods

- Oceans already take up more than **30% of humanity's carbon emissions** and scientists are



experimenting with ways to boost that capacity.

- One approach is to **enhance marine alkalinity**, either by directly adding natural or synthetic alkaline minerals or the electrochemical processing of seawater.
- Another approach, known as **ocean fertilization**, increases the density of tiny phytoplankton that produce

and sequester organic carbon through photosynthesis, like plants on land. **Adding nitrogen or iron stimulates phytoplankton growth.**

- The main concern for this method includes **unintended consequences on ecosystems.**

# Agriculture

## 1) Palm Oil

### Context

- **Indonesia, the world's biggest producer, exporter, and consumer of palm oil**, announced that it will ban all exports of the commodity and its raw materials to reduce domestic shortages of cooking oil and bring down its skyrocketing prices.
- The announcement came amid surging global food prices as a consequence of the ongoing Russia-Ukraine conflict.

### How important is palm oil to global supply chains?

- Palm oil is the **world's most widely used vegetable oil** with its global production in crop year 2020 exceeding 73 million tonnes (MT).
- Made from the **African oil palm**, it is **used as cooking oil, and in everything from cosmetics to processed food to cleaning products**.
- The oil palm industry has come under criticism for what are reportedly **unsustainable production practices** leading to deforestation, and exploitative labour practices carried forward from the colonial era.
- However, palm oil is preferred by many as it is **inexpensive**; oil palms produce more oil per hectare than other vegetable oil plants. **Indonesia and Malaysia together account for almost 90% of the global palm oil production**, with **Indonesia** producing the largest quantity at over 43 MT in the 2021 crop year.
- Palm oil makes up 40% of the global supply of the four most widely used edible oils: palm, soybean, rapeseed (canola), and

sunflower oil. Indonesia is responsible for 60% of the global supply of palm oil.

- The prices of palm oil rose this year as demand increased because of the **short supply of alternative vegetable oils**.

### How will it impact India?

- **India is the biggest importer of palm oil** which makes up 40% of its vegetable oil consumption. India meets half of its annual need for 8.3 MT of palm oil from Indonesia. Last year, the Centre also unveiled its plan to **boost India's domestic palm oil production** (*Refer Pulse August 2021 edition "National Edible Oil Mission-Oil Palm" topic*).
- Despite the rising prices of the commodity, India's palm oil imports jumped 21% in March from the previous month as traders moved to secure alternatives to sunflower oil that could no longer be bought from Ukraine.

## 2) Formation and Promotion of FPOs

### What is a Farmer Producer Organization?

- A Producer Organisation (PO) is a **legal entity formed by primary producers**, viz. farmers, milk producers, fishermen, weavers, rural artisans, craftsmen.
- A PO can be a producer company, a cooperative society or any other legal form which provides for **sharing of profits/benefits among the members**.
- In some forms like producer companies, institutions of primary producers can also become members of PO.

- Farmer Producer Organization (FPO) is **one type of PO where the members are farmers.**
- **Small Farmers' Agribusiness Consortium (SFAC)** is providing support for the promotion of FPOs by mobilizing the farmers and helping them in registering as companies and providing them with handholding support and training for their sustainability.

### Formation and Promotion of FPOs Scheme

- In 2021, Government of India launched a Scheme titled "Formation and Promotion of 10,000 Farmer Produce Organizations (FPOs)" to form and promote 10,000 new FPOs in the country.
- Formation and Promotion of FPOs would be a **new Central Sector Scheme** under the **Ministry of Agriculture and Farmers' Welfare** to form and promote 10,000 new FPOs.
- Initially there will be **three implementing Agencies** to form and promote FPOs, namely Small Farmers Agri-business Consortium (SFAC), National Cooperative Development Corporation (NCDC) and National Bank for Agriculture and Rural Development (NABARD).

- States may also, if so desire, nominate their Implementing Agency in consultation with the Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW).
- DAC&FW will allocate Cluster/States to Implementing Agencies which in turn will form the Cluster-Based Business Organization in the States.

### Benefits

- Small and marginal farmers do not have the economic strength to apply production technology, services and marketing including value addition.
- Through the formation of FPOs, farmers will have **better collective strength** for better access to quality input, technology, credit and better marketing access through economies of scale for better realization of income.

### Why in News?

- Recently, the Ministry of Agriculture & Farmers Welfare has organized the National Conference of Cluster Based Business Organization's (CBBOs), under the Central Sector Scheme of Formation and Promotion of 10,000 Farmer Producer Organizations.

# Economy

## 1) Govt. amends rules governing Nidhi companies

### About Nidhi companies

- Nidhi companies carry on the business of **accepting deposits and lending the same on demand amongst its members**. Their main objective is **cultivating the habit of thrift and saving amongst its members**.
- It is a **type of Non-Banking Financial Company (NBFC)** registered under the **Companies Act 2013**.
- One of the key features of a Nidhi company is the **limitation of its services to its members only**. This reduces the risk of non-payment of loans as the Company accepts deposits and offers loans to its members only.
- These companies are **not entitled to carry on** the business of Hire Purchase Financing, Insurance, Chit Funds and Acquisition of securities or Issue of any Debt Instruments.
- Nidhi Companies are regulated by the **Ministry of Corporate Affairs**.
- Since Nidhi's come under one class of NBFCs, **RBI is empowered to issue directions** to them in matters relating to their deposit acceptance activities. However, in recognition of the fact that these Nidhi's deal with their shareholder-members only, RBI has **exempted the notified Nidhi's from the core provisions of the RBI Act and other directions applicable to NBFCs**.

### Why in News?

- The union government has amended Nidhi rules, under which **public companies seeking to function as Nidhis must obtain prior declaration from the**

**Centre before accepting deposits.**

- The government has amended the rules to **protect the interests of the public and prevent possible illegal fundraising activities**.
- The move by the Corporate Affairs Ministry also came against the backdrop of a significant increase in the number of Nidhi companies in recent years and instances of the public getting duped by fraudulent money-pooling activities.

## 2) Foreign Exchange Reserve

### What is it?

- Foreign Exchange Reserve indicates the reserves held by RBI in the form foreign currency assets, gold, SDR and reserve tranche. Components of foreign exchange reserve:
1. **Foreign Currency Assets-** Currencies of foreign countries are held in foreign exchange reserves. Apart from currency it also includes foreign currency deposits held by RBI with foreign central banks and the Bank for International Settlements (BIS).
  2. **Gold Stock of RBI-** The RBI has gold stock as a backup to issue currency and to meet unexpected Balance of Payments (BOP) problems. (*BOP problem occurs when a nation is unable to pay for essential imports or service its external debt repayments*)
  3. **SDR Holdings-** Special Drawing Rights (also called "*paper gold*") is a reserve created by the **International Monetary Fund (IMF)** to help countries that have BOP problems. The member countries have to contribute to this account in proportion to their IMF quota. The SDR basket consists of

**five** major currencies of the world - the US dollar, Euro, British Pound, Chinese Renminbi and Yen (Japan).

4. **Reserve Tranche-** The reserve tranche is a portion of the required quota of currency that each **IMF** member country must provide to the IMF. It can be accessed by the member country at any time for its own purposes without a service fee.

### Why in News?

- Eight months after hitting a record high of \$642.45 billion in September 2021, India's foreign exchange reserves have now fallen below the \$600 billion mark amid capital outflows and strengthening dollar.

### What happened?

- The decline was on account of a fall in **foreign currency assets (FCAs)**, a major component of the overall reserves. The **valuation loss**, reflecting the appreciation of the US dollar against major currencies, and **decline in gold prices** have played a part in the decline in foreign exchange reserves.
- Since March this year, the **U.S. Federal Reserve has been raising its benchmark interest rate** causing investors seeking higher returns to pull capital away from emerging markets such as India and back into the United States. This, in turn, has put pressure on emerging market currencies which have **depreciated significantly** against the U.S. dollar so far this year.
- The foreign currency assets also include the **effect of appreciation or depreciation** of non-US units like the euro, pound and yen held in the reserves. For instance, if a portion of the reserves are in euros and the euro depreciates against

the dollar, this would cause a drop in the value of forex reserves.

- Another major reason for the decline in forex reserves is **capital outflows by foreign portfolio investors (FPIs)** who pulled out \$ 21.43 billion since September 2021 as the US Federal Reserve started monetary policy tightening and interest rate hikes.
- The demand for dollars also remained high as the **Russia-Ukraine war** led to a spike in oil and commodity prices, apart from depreciation of other currencies.

### Weakening of Indian Rupee

- Recently, the Indian rupee hit an all-time low against the U.S. dollar weakening past the 77 rupees to a dollar mark. Many analysts expect the rupee to weaken further in the coming months to hit the 80 rupees to a dollar mark.

### What determines the rupee's value?

- The value of any currency is determined by **demand for the currency as well as its supply**. When the supply of a currency increases, its value drops. On the other hand, when the demand for a currency increases, its value rises. In the wider economy, **central banks determine the supply of currencies, while the demand for currencies depends on the amount of goods and services produced in the economy**.
- In the **forex market**, the supply of rupees is determined by the **demand for imports and various foreign assets**. So, if there is high demand to import oil, it can lead to an increase in the supply of rupees in the forex market and cause the rupee's value to drop. The demand for rupees in the forex market, on the other hand, depends on foreign demand for Indian exports and other domestic assets.

- So, for instance, when there is great enthusiasm among foreign investors to invest in India, it can lead to an increase in the supply of dollars in the forex market which in turn causes the rupee's value to rise against the dollar.
- It should be noted that the aim of the RBI's policy is to **allow the rupee to find its natural value in the market but without undue volatility or causing unnecessary panic** among investors.
- State-run banks are usually instructed by the RBI to sell dollars in order to offer some support to the rupee. By thus selling dollars in the open market in exchange for rupees, the RBI can improve demand for the rupee and cushion its fall.

### 3) India-Australia trade agreement

#### Context

- India and Australia have signed an **Economic Cooperation and Trade Agreement (ECTA)**. The landmark bilateral trade pact is the **second trade agreement** India has signed this year after inking a similar deal with the **United Arab Emirates** (*Refer Pulse February 2022 edition "Comprehensive Economic Partnership Agreement" topic*) in February.
- The ECTA is expected to **increase trade between the two sides to \$45-50 billion** over five years, from the current estimate of \$27 billion, and create over **10 lakh additional job opportunities**.

#### About ECTA

- ECTA is an interim trade agreement that would be followed by a **comprehensive deal** by the end of the year. Trade talks between Delhi and Canberra had resumed in

September last year after it began nearly a decade back in 2011.

- This is also the **first such pact signed by India with a developed country in a decade**.
- Indian exports to Australia have been growing at a rapid clip and the agreement, which may be expanded further after its implementation in the current form, will **facilitate zero duty access on over 96% of Indian exports, including several labour-intensive industries**.
- India will, in turn, offer **preferential access to Australia on over 70% of its tariff lines on goods imports**, including lines of export interest to Australia which are primarily raw materials and intermediaries such as coal, mineral ores, etc.
- In a historic first, **India may open up to a wide-range of alcoholic and non-alcoholic drinks** including Australian beer. Australian wines costing over \$5 may face lower import duties in the Indian market.
- Tariffs will be eliminated on more than 85% of Australian goods exports to India (valued at more than \$12.6 billion a year), rising to almost 91% (valued at \$13.4 billion) over 10 years.
- The agreement provides **adequate safeguards to prevent circumvention and protect against a sudden surge in import of goods**. This is the first trade deal which includes a **compulsory review mechanism after 15 years**.

#### What is the dispute settlement mechanism in place?

- Both parties have agreed to hold consultations — and make every effort to find a solution — in case of disputes that may emerge in the



course of trade in goods or services.

- They have also recognised that in case they have to resort to international arbitration, they may opt for an organisation (i.e, World Trade Organization) where both are members. They may also use “good offices” and form panels with qualified members drawn from government and business to resolve the disputes.
- The **dispute resolution may range from 45 days to 15 months.**

#### What are the rules of origin included in the agreement?

- The rules of origin are based on the principle that they should be **wholly obtained or produced in the territory of one or both of the parties.** This section ensures that waste material will not be exported by either side unless they contribute to the production of any of the items listed in the ECTA.

#### Indo-Australian Relations

- Australia is the 17th largest trading partner of India and India is Australia's 9th largest trading partner. India-Australia bilateral trade for both merchandise and services is valued at \$27.5 billion in 2021.
- India's merchandise exports to Australia grew 135% between 2019 and 2021. India's exports consist primarily of a broad-based basket largely of finished products and were US\$ 6.9 billion in 2021.
- India and Australia are partners in the trilateral **Supply Chain Resilience Initiative (SCRI)** arrangement along with Japan which seeks to enhance the resilience of supply chains in the Indo-Pacific Region.
- Further, India and Australia are also members of the **Quad**, also

comprising the **US, and Japan**, to further enhance cooperation and develop partnerships across several issues of common concern.

## 4) Standing Deposit Facility

### What's in the news?

- The Reserve Bank of India (RBI) has introduced the **Standing Deposit Facility (SDF)**, allowing banks to park their excess funds at a higher rate but without taking any collateral from the central bank.
- The SDF rate has been set at an **interest rate of 3.75%**, higher than the **3.35% fixed reverse repo rate**, which is the rate at which banks park their excess funds with the RBI in **exchange of government securities as collateral.**
- The **SDF will replace the fixed rate reverse repo as the floor of the liquidity adjustment facility (LAF) corridor.** However, the reverse repo continues to remain in the toolkit of the RBI as a monetary policy instrument and its operation will be at the discretion of the RBI for purposes specified from time to time.

### Features of SDF

- SDF has the following features viz;
  - it is the **floor of the LAF corridor**, replacing the hitherto fixed rate reverse repo;
  - it is a **monetary policy instrument to absorb liquidity without any collateral** (collaterals in this case are normally government securities) with an interest rate of 3.75 per cent;
  - it is operated on an **overnight basis**, with the flexibility to absorb liquidity

- for longer tenor with appropriate pricing;
- deposits under the SDF **shall not be reckoned as balances eligible for the maintenance of the cash reserve ratio (CRR), but shall be an eligible asset for maintenance of the statutory liquidity ratio (SLR).**

#### Role of SDF

- The main purpose of SDF is to **reduce the excess liquidity of Rs 8.5 lakh crore in the system, and control inflation.**
- In **2018**, the **amended Section 17 of the RBI Act** empowered the Reserve Bank to introduce the SDF – an additional tool for **absorbing liquidity without any collateral.**
- Through this new tool the central bank can absorb excess liquidity

from the commercial banks, which is currently hovering at about Rs 8.5 lakh crore, **without an exchange of collateral like government-backed securities (G-Secs).**

- Interest rate for SDF has been fixed at **3.75 per cent, 40 basis points higher than reverse repo rate.** It is a win-win for both the central bank and commercial banks, as it will be more attractive for the commercial banks to pump that liquidity back to the central bank due to higher returns, while for the central bank it would not need to offer any security to the commercial bank.

# Organisations

## 1) Countries will have to 'justify' veto votes at UN

### About UNGA

- United Nations General Assembly (UNGA) is the main deliberative, policymaking and representative organ of the UN.
- It is **one of the six principal organs** which make up the UN.
- All 193 Member States of the UN are represented in the General Assembly, making it the **only UN body with universal representation**.
- The annual session is attended by world leaders to discuss and debate the world's most important global issues and how to address them.

### Voting

- **Each country has one vote.**
- Decisions on important questions, such as those on peace and security, admission of new members and budgetary matters, require a **two-thirds majority**. Decisions on other questions are by **simple majority**.

### About UNSC

- The United Nations Security Council (UNSC) was established in **1946** as **one of the six principal organs of the UN**. It is generally viewed as the apex of the UN system.
- It is responsible for the **maintenance of international peace and security**.
- Its powers include the establishment of peacekeeping operations, the establishment of international sanctions, and the authorization of military action through Security Council resolutions.

- It is the only UN body with the authority to issue **binding resolutions** to member states.

### Membership

- UNSC consists of 15 Members.
- The council has **five permanent members** (P-5) United States, Russia, China, United Kingdom and France.
- These permanent members can **veto** any substantive Security Council resolutions, including those on the admission of new member states.
- The Security Council also has **10 non-permanent members**, elected on a **regional basis** as follows:
  - five for African and Asian States;
  - one for Eastern European States;
  - two for the Latin American and Caribbean States; and
  - two for Western European and other States.
- Each year the 193-member UN General Assembly (UNGA) elects five non-permanent members for a **two-year term**.
- The body's presidency rotates monthly among its members.

### Vote and Majority Required

- Each member of the Security Council shall have **one vote**.
- Decisions of the Security Council on **procedural matters** shall be made by an **affirmative vote of nine members**.
- Decisions of the Security Council on **all other matters** shall be made by an **affirmative vote of nine members including the concurring votes of the permanent members**.
- However, any member, whether permanent or nonpermanent, must

abstain from voting in any decision concerning the peaceful settlement of a dispute to which it is a party.

#### Why in News?

- The 193 members of the United Nations General Assembly adopted

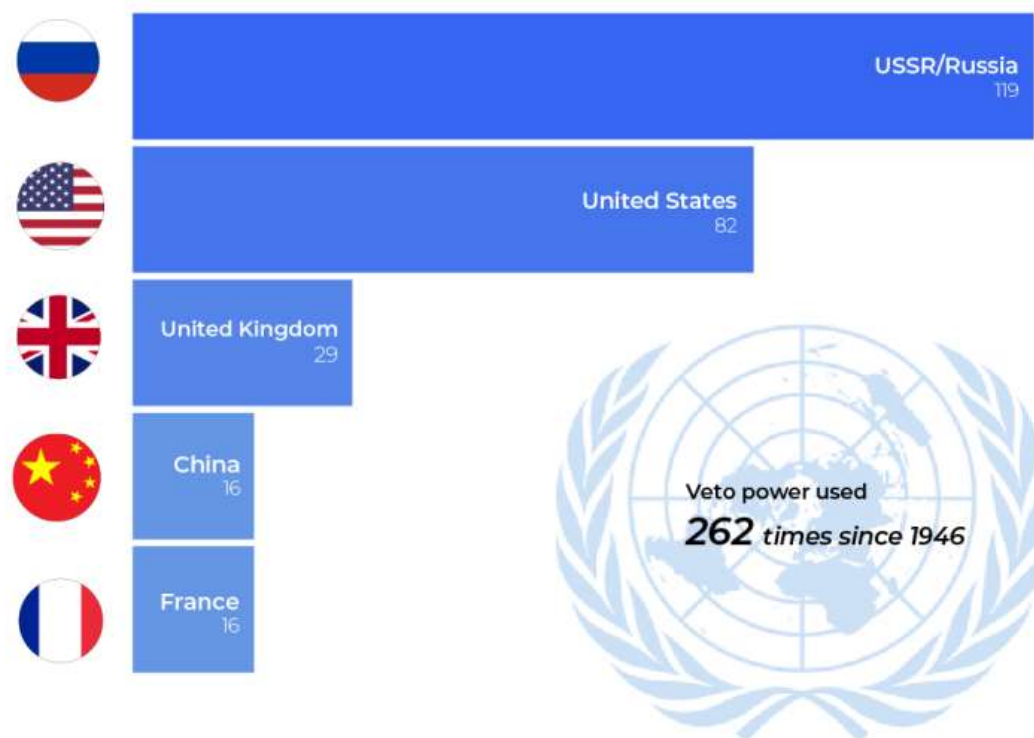
by consensus on a resolution **requiring the five permanent members of the Security Council to justify their use of the veto.**

- The push for reform was revived by Russia's invasion of Ukraine.

#### UNITED NATIONS

### Who vetoed the most at the UN?

The five permanent members of the United Nations Security Council have the right to veto or stop a resolution from being passed. Here's how many times each country has used their veto power since the first veto in 1946 to February 25, 2022:



Source: United Nations, news agencies | April 19, 2022



- The measure is intended to make veto-holders United States, China, Russia, France and Britain “pay a higher political price” when they use the veto to strike down a Security Council resolution.
- It is unclear if the five permanent members will use the veto less, or more — as they could propose controversial texts they know their rivals will veto only to force them to justify their stance publicly.

### 2) Asian Development Bank About ADB

- The Asian Development Bank (ADB) was founded in 1966 with the primary mission of **fostering growth and cooperation among countries in the Asia-Pacific Region.**
- It is headquartered in **Manila, Philippines.**

- At present, ADB comprises 68 members (including **India**)- of which **49 are from within Asia and the Pacific and 19 outside.**
- The ADB was **modeled closely on the World Bank**, and has a similar weighted voting system where votes are distributed in proportion with members' capital subscriptions.
- The two largest shareholders of the ADB are **the US and Japan.**
- ADB is an official United Nations Observer.

#### Why in News?

- The Asian Development Bank has released its **Asian Development Outlook 2022.**

#### Highlights of the Report

- The report has projected that **India will grow by 7.5 per cent** in the current fiscal year before picking up to **8 per cent the next year.**
- South Asian economies are expected to expand collectively by 7 per cent in FY 2022 and 7.4 per cent in FY 2023.
- The region's growth dynamics are largely driven by India and Pakistan. By subregion, East Asia, South Asia and Southeast Asia are all expected to return to pre-pandemic rates of economic growth.

### 3) G7 nations

#### About G7

- The Group of Seven (G7) is a collective of seven of the world's most industrialized and developed economies. Their political leaders come together annually to discuss important global economic, political, social and security issues.
- The G7 member countries are the **United States, Britain, France, Japan, Germany, Italy, and Canada.**

- Together the member countries represent 40% of global GDP and 10% of the world's population.
- Russia belonged to the forum from 1998 through 2014, when the bloc was known as the G8, but was suspended following its annexation of Crimea.
- **India is not a member** of the G-7 grouping.



#### Why in News?

- G7 finance ministers pledged additional support to Ukraine exceeding \$24 billion for 2022 and beyond.

### 4) UNHRC

#### About UNHRC

- The Human Rights Council is an **inter-governmental body within the United Nations system.**
- The Council's mandate is to promote "universal respect for the protection of all human rights and fundamental freedoms for all" and "address situations of violations of human rights, including gross and systematic violations, and make recommendations thereon."
- It has the ability to discuss all thematic human rights issues and situations that require its attention throughout the year.
- The Council was created by the **United Nations General Assembly**

in **2006**. It replaced the former United Nations Commission on Human Rights.

- The headquarters of UNHRC is in **Geneva, Switzerland**.

#### Membership

- The Council is made of **47 Member States**, which are elected by the majority of members of the General Assembly of the United Nations through **direct and secret ballot**.
- The Council's Membership is based on **equitable geographical distribution**.
- Members of the Council serve for a period of **three years** and are **not eligible for immediate re-election after serving two consecutive terms**.

#### Why in News?

- Russia has been suspended from the UN Human Rights Council after the 193-member General Assembly voted to adopt a resolution moved by the United States over allegations that Russian troops killed civilians while pulling back from towns around the Ukrainian capital of Kyiv.

- The resolution was adopted with 93 votes in favour, 24 against and 58 abstentions, including India.
- With this, Russia became the second country to have its membership rights stripped at the rights council, which was established in 2006. In 2011, **Libya** was suspended by the assembly when upheaval in the North African country brought down longtime leader Moammar Gadhafi.
- The Human Rights Council consists of 47 Member States, elected directly and individually by secret ballot by the majority of the UNGA members. The **General Assembly, with its two-thirds majority of the members present and voting**, may suspend the rights of membership in the Council of a member of the Council that commits gross and systematic violations of human rights. **Abstentions do not count**.
- Russia's current membership on the Council expires in December 2023.



# Science and Technology

## 1) GAGAN

### About GAGAN

- GAGAN is an **Indian Satellite Based Augmentation System (SBAS)** launched by the Indian government in **2015**. GAGAN stands for **GPS Aided GEO Augmented Navigation**.
  - *SBAS is a wide area augmentation system that provides augmented accuracy and integrity to a Global Navigation Satellite Systems (GNSS) navigation signal such as GPS.*
- GAGAN is implemented to provide required accuracy, continuity, availability, and integrity to enable users/aircrafts to rely on GPS for all phases of flight.
- It was developed by the **Airports Authority of India (AAI)** and **Indian Space Research Organization (ISRO)**.
- There are **only four Space-Based augmentation systems available in the world** namely India (GAGAN), the United States (Wide Area Augmentation System- WAAS) Europe (European Geostationary Navigation Overlay Service- EGNOS) and Japan (MTSAT Satellite Augmentation System- MSAS).
- GAGAN is the **first such system developed for India and neighbouring countries in the equatorial region**.

### How does it work?

- GAGAN consists of a set of ground reference stations positioned across various locations in India called **Indian Reference Station (INRES)**, which gathers GPS satellite data. A master station, **Indian Master Control Centre (INMCC)** collects data from

reference stations and creates GPS correction messages.

- The corrected differential messages are uplinked via Indian Uplink Station (INLUS) and then broadcasted on a signal from **three geostationary satellites (GSAT-8, GSAT-10 and GSAT-15)**. The information on this signal is compatible with basic GPS signal structure, which means any SBAS enabled GPS receiver can read this signal.

### Coverage Area

- GAGAN GEO footprint expands from **Africa to Australia** and GAGAN system has capability to cater 45 reference stations for expansion to neighbouring countries.

### Benefits from GAGAN

- GAGAN system is being used for **effective management of wildlife resources and monitoring of forests**.
- It can provide **navigational support** to Indian railways for signalling.
- The **Road Asset Management System (RAMS)** is likely to be developed for all National Highways in the country and a modern management system that will use the GAGAN system.
- GAGAN signals can also be used to **manage traffic** in real time to avoid traffic jams.

### Why in News?

- IndiGo has become the first airline in the country to land aircraft using the indigenous navigation system GAGAN.
- GAGAN is used to provide lateral and vertical guidance when an aircraft is approaching a runway for landing. Its precision is especially useful at small airports

where the instrument landing system (ILS) has not been installed.

- In India's civil aviation sector, GAGAN will modernise the airspace, reduce flight delays, save fuel and improve flight safety.
- The Directorate General of Civil Aviation (DGCA) has issued a **mandate for all aircraft registered in India after July 1, 2021 to be fitted with GAGAN equipment.**

## 2) H3N8 Bird Flu

### About Bird Flu

- Bird flu, also called **avian influenza**, is a viral infection caused by **Influenza Type A viruses** which spreads from bird to bird. These viruses occur naturally among wild aquatic birds worldwide and can infect domestic poultry and other bird and animal species.
- There are **several subtypes** of the avian influenza virus. Currently, a particularly deadly strain of bird flu -- **H5N1** -- continues to spread among poultry in Egypt and in certain parts of Asia. The H5N1 virus can cause severe flu with a high mortality rate.
- Avian influenza viruses **do not normally infect humans**. However, there have been instances of certain highly pathogenic strains causing severe respiratory disease in humans. In most cases, the people infected had been in close contact with infected poultry or with objects contaminated by their faeces.
- However, the **World Health Organization** had expressed concern that the virus could mutate to become more easily transmissible between humans, raising the possibility of an influenza pandemic.

### Why in News?

- **China** has recorded its **first human infection with the H3N8 strain of bird flu.**
- The H3N8 variant has previously been detected elsewhere in the world in horses, dogs, birds and seals but no human cases of H3N8 have been reported.

## 3) Near Field Communication

### What is NFC?

- Near Field Communication (NFC) is a **short-range wireless connectivity technology** that allows NFC-enabled devices to **communicate with each other and transfer information quickly and easily with a single touch** — whether to pay bills, exchange business cards, download coupons, or share a document.
- NFC **transmits data through electromagnetic radio fields**, to enable communication between two devices.
- **Both devices must contain NFC chips**, as transactions take place within a very short distance.
- NFC-enabled devices must be either **physically touching or within a few centimetres** from each other for data transfer to occur.
- The process is **much faster compared to scanning a QR code or entering the UPI-linked mobile number** which has been the conventional way till now.

### Applications of NFC technology

- It is used in **contactless banking cards** to perform money transactions or to generate **contactless tickets** for public transport.
- Contactless cards and readers use NFC in several applications from **securing networks and buildings to monitoring inventory and**

**sales, preventing auto theft, keeping tabs on library books, and running unmanned toll booths.**

- It also has an application in healthcare, to monitor patient stats through **NFC-enabled wristbands.**
- NFC is used in **wireless charging** too.

### Advantages

- NFC technology is designed for an operation between devices within a few centimetres from each other. This makes it **difficult for attackers to record the communication** between the devices compared to other wireless technologies which have a working distance of several metres.
- The **security level of the NFC communication is by default higher** compared to other wireless communication protocols.
- **Peer to Peer communication** which is a mechanism to cipher all exchanged data to avoid external interpretation is possible.

### Why in News?

- Google Pay, a digital wallet platform, has recently launched the 'Tap to pay for UPI' feature in India. The feature makes use of the NFC technology.
- The functionality will allow users with NFC-enabled Android smartphones and UPI accounts linked to Google Pay to carry out transactions just by tapping their phones on point-of-sale (POS) terminals.

## 4) Solid Fuel Ducted Ramjet

### What's in the news?

- The Defence Research and Development Organisation (DRDO) has successfully flight tested Solid Fuel Ducted Ramjet (SFDR) booster missile propulsion system, at the

Integrated Test Range (ITR) in Chandipur off the Odisha coast.

### About SFDR

- The SFDR technology is a **missile propulsion system based on the principle of the Ramjet Engine.**
  - The Ramjet, unlike solid-propellant rockets, **absorbs oxygen from the atmosphere while in flight.** In a ramjet, the high pressure is produced by "ramming" external air into the combustor using the forward speed of the vehicle.
  - The external air that is brought into the propulsion system becomes the **working fluid**, much like a turbojet engine. In a turbojet engine, the high pressure in the combustor is generated by a piece of machinery called a **compressor.**
  - But there are **no compressors in a ramjet.** Therefore, ramjets are **lighter and simpler** than a turbojet. Ramjets **produce thrust only when the vehicle is already moving;** ramjets cannot produce thrust when the engine is stationary or static.
- The SFDR-based propulsion enables a missile to **intercept aerial threats at very long range at supersonic speeds.**
- Because SFDR technology **eliminates the need for oxidizers**, air-to-air missiles with SFDR technology **can attain longer ranges.**
- The SFDR-based missiles travel at **supersonic speeds** that exceed the speed of sound (Mach 1) and have **exceptional manoeuvrability,**

ensuring that the target aircraft cannot escape.

- The SFDR has been developed by Defence Research and Development Laboratory, Hyderabad, in collaboration with other DRDO laboratories such as Research Centre Imarat, Hyderabad and High Energy Materials Research Laboratory, Pune.

## 5) W Boson

### What is a boson?

- A boson is a **subatomic particle that carries force** with an integer spin quantum number in particle physics.
- Bosons are **one of two fundamental subatomic particle types; fermions**, which have half-odd-integer spin, are the other.
- **Every subatomic particle that can be seen is either a boson or a fermion.**

### What is a Higgs Boson?

- The **Higgs particle is a boson. All physical forces are assumed to be caused by bosons**, which are particles. **Photons, W and Z bosons, and the gluon** are some of the other known bosons.
- The Higgs boson is the fundamental particle associated with the **Higgs field**, a field that gives mass to other fundamental particles such as electrons and quarks.
- The **Nobel Prize-winning discovery of the Higgs boson** (commonly known as the "**God particle**") in 2012 **confirmed the Standard Model of physics**, which also predicts that a Higgs boson will decay to a pair of bottom quarks around 60% of the time. **Peter Higgs** was the first to hypothesise that this particle may exist in the 1960s.
  - The Standard Model of particle physics is a

hypothesis that **classifies all known constituent particles and defines three of the four known fundamental forces** in the universe (**electromagnetic, weak, and strong interactions, excluding gravitational force**).

- Each fundamental force has its own corresponding boson – the strong force is carried by the “gluon”, the electromagnetic force is carried by the “photon”, and the “W and Z bosons” are responsible for the weak force. Although not yet found, the “graviton” should be the corresponding force-carrying particle of gravity.

### W Bosons

- Discovered in 1983, the W boson is a **fundamental particle**. Together with the **Z boson**, it is responsible for the **weak force**, one of four fundamental forces that govern the behaviour of matter in our universe.
- The W boson, which is **electrically charged, changes the very make up of particles**. It switches protons into neutrons, and vice versa, through the weak force, **triggering nuclear fusion and letting stars burn**.
- This burning also creates heavier elements and, when a star dies, those elements are tossed into space as the building blocks for planets and even people.

### Why in News?

- A new analysis of data collected at an experiment in the US before 2011 has revealed the **mass of the W boson to be higher than expected according to theory**.
- The **new measurement disagrees with the Standard Model of**

**particle physics**, which describes the properties and behaviour of elementary particles.

- According to a new measurement, the mass of W bosons appears to be **higher than that predicted by the Standard Model**.

### Significance

- There's a framework of rules that describes how the elementary particles of our universe look and behave that physicists have spent decades putting together, called the **Standard Model**.
- The Standard Model can't explain gravity and dark matter. It also can't explain why the Higgs boson is so heavy, why the universe has

more matter than antimatter, why gravity is so weak or why the size of the proton is what it is.

- And now there's **new evidence that it's wrong about the mass of one particle**.
- So when a Standard Model prediction is found to be wrong in an experiment, physicists can study the experiment more closely to understand where the value might have deviated. These deviations are broadly called '**new physics**': they're what physicists can use to fix the Standard Model.



## Reports and Indices

### 1) CAG report on Aadhaar

#### Aadhaar

- Aadhaar number is a **12-digit random number** issued by the **UIDAI (Unique Identification Authority of India)** to the **residents of India** after satisfying the verification process laid down by the Authority.
  - *The Aadhaar Act, 2016 defines residency as, "An individual who has **resided in India for a period or periods amounting in all to 182 days or more in the 12 months** immediately preceding the date of application for enrolment."*
- Any individual, **irrespective of age and gender**, who is a resident of India, may voluntarily enrol to obtain Aadhaar number.
- Person willing to enrol has to provide **minimal demographic and biometric information** during the enrolment process which is **totally free of cost**.
- An individual needs to enrol for Aadhaar only once and after de-duplication only one Aadhaar shall be generated, as the uniqueness is achieved through the process of demographic and biometric de-duplication.
- Aadhaar number is devoid of any intelligence and **does not profile people based on caste, religion, income, health and geography**.
- The Aadhaar number is a **proof of identity**, however, it **does not confer any right of citizenship or domicile** in respect of an Aadhaar number holder.
- Aadhaar identity platform enables the Government of India to directly reach residents of the country in delivery of various subsidies,

benefits and services by using the resident's Aadhaar number only.

#### Why in News?

- Recently, Comptroller and Auditor General of India (CAG) audit reports indicate there are **issues of data-matching, errors in authentication, and shortfall in archiving on the functioning of the UIDAI**.
- UIDAI (Unique Identification Authority of India) is the **statutory authority** established in 2016 to issue Aadhaar to all residents of the country. As of October 31, 2021, UIDAI had issued 131.68 crore Aadhaar numbers.

#### Problems with UIDAI that have been identified by the CAG

- The CAG has said the data of Aadhaar card holders have not been matched with their Aadhaar number even after 10 years in some cases.
- It has also criticized the **absence of a system to analyze the factors** leading to **authentication errors**, and said that even though UIDAI was maintaining one of the largest biometric databases in the world, it **did not have a data archiving policy**, which is considered a vital storage management best practice.
- The CAG report noted that UIDAI provided Authentication services to banks, mobile operators and other agencies **free of charge** till March 2019, contrary to the provisions of their own Regulations, depriving revenue to the Government.
- The report also noted that the Authority had **not ensured security and safety of data in Aadhaar vaults**. They had not independently conducted any verification of compliance to the process involved.



- In the conclusion of its report, the CAG has said that UIDAI generated Aadhaar numbers with incomplete information, which, along with the lack of proper documentation or poor quality biometrics, have resulted in multiple or duplicate Aadhaar cards being issued to the same person.
- The CAG report recommended that **The UIDAI should go beyond self-declaration, and prescribe a procedure and required documentation other than self-declaration**, in order to confirm and authenticate the residence status of applicants.

## 2) Top Military Spenders-2021

### What's in the news?

- Defence think-tank Stockholm International Peace Research Institute (SIPRI) has released its latest report on military expenditure of countries across the world.

### Highlights of the Report

- **India was the third-highest military spender** in the world behind **the US and China** as the global defence expenditure reached an all-time high of \$2.1 trillion in 2021, hitting record levels despite the coronavirus pandemic.
- India's military spending, amounting to **\$76.6 billion in 2021**, grew by 0.9 per cent from 2020 and by 33 per cent from 2012.

- In a push to strengthen the indigenous arms industry in India, **64 per cent of capital outlays** in the military budget of 2021 were **earmarked for acquisitions of domestically produced arms**.
- The **top five military spenders—the United States, China, India, the United Kingdom, and Russia**—accounted for 62 per cent of the global military expenditure.
- As a result of the economic recovery from the COVID-19 pandemic, **defence spending amounted to 2.2 per cent of global GDP in 2021**.

### Related Information About SIPRI

- The Sweden-based SIPRI is an **independent international institute** dedicated to research into conflict, armaments, arms control and disarmament.
- It was established on the basis of a decision by the Swedish Parliament and receives a substantial part of its funding in the form of an **annual grant from the Swedish Government**.
- Established in 1966, SIPRI provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

# Polity

## 1) Citizenship (Amendment) Act, 2019

### How is citizenship acquired in India?

- In India, citizenship is regulated by the **Citizenship Act, 1955**.
- The Act specifies that citizenship may be acquired in India through **five methods** – by birth in India, by descent, through registration, by naturalisation (extended residence in India), and by incorporation of territory into India.

### Can illegal migrants acquire citizenship?

- An illegal migrant is prohibited from acquiring Indian citizenship.
- An illegal migrant is a foreigner who: **(i) enters the country without valid travel documents, like a passport and visa, or (ii) enters with valid documents, but stays beyond the permitted time period.**
- Illegal migrants may be imprisoned or deported under the **Foreigners Act, 1946** and the **Passport (Entry into India) Act, 1920**.

### How does the 2019 Act seek to change the criteria for determining citizenship?

- The Citizenship (Amendment) Act 2019 makes it clear that immigrants belonging to **Hindu, Sikh, Christian, Buddhist, Jain and Parsi communities** from the Muslim-majority nations (**Pakistan, Bangladesh and Afghanistan**) will not be treated as illegal.
- They will also be eligible to get **naturalised citizenship**.
- One of the requirements for citizenship by **naturalization** under the 1955 Act is that the applicant must have resided in India during the last 12 months,

and for 11 of the previous 14 years.

- The amendment act **relaxes this 11-year requirement to five years** for persons belonging to these six religions from these three countries.
- They will also no longer be deported or jailed under the Foreigners Act of 1946 and the Passport (Entry into India) Act of 1920.
- The cut-off date for citizenship is **December 31, 2014** which means the applicant should have entered India on or before that date.

### Rationale of the Law

- The Statement of Objects and Reasons in the amendment Act (SoR) states that India has had historic migration of people from Afghanistan, Pakistan and Bangladesh, and these countries have a **state religion**, which has resulted in **religious persecution** of minority groups.

### Are the provisions of the Act applicable across the country?

- The Act clarifies that the amendments will not apply to certain areas. These are:
  - the tribal areas of Assam, Meghalaya, Mizoram, and Tripura, as included in the **Sixth Schedule to the Constitution**. These tribal areas include Karbi Anglong (in Assam), Garo Hills (in Meghalaya), Chakma District (in Mizoram), and Tripura Tribal Areas District.
  - the **states regulated by the "Inner Line" permit** under the Bengal Eastern Frontier Regulation 1873.

### How does the Act change the regulations for Overseas Citizens of India?

- The Act also amends the provisions on registration of Overseas Citizens of India (OCI).
- OCI cardholders are **foreigners who are persons of Indian origin**.
- The government may cancel a person's OCI registration on various grounds specified in the 1955 Act.
- The 2019 amendment **adds another ground for cancelling OCI registration** — violation of any law notified by the central government.

### Why in News?

- The Ministry of Home Affairs (MHA) has asked the parliamentary committee for more time to frame the rules of the Citizenship (Amendment) Act, 2019 (CAA), on the grounds that consultation process is on.
- Besides the consultation process, MHA said that the construction of the rules had been delayed due to the COVID-19 pandemic. Without the rules being framed, the Act cannot be implemented.

### Related Information

#### Inner Line Permit

- The Inner Line Permit (ILP) is an official travel document that allows Indian citizens to stay in an area under the ILP system.
- The document is currently required by visitors to **Arunachal Pradesh, Manipur, Nagaland and Mizoram**.
- The ILP is issued by the **concerned state government**. The permits issued are mostly of different kinds, provided separately for tourists, tenants and for other purposes.
- The main objective of the ILP system is to prevent settlement of other Indian nationals in the

notified states in order to **protect the indigenous population**. It also offers protection for the locals with regards to lands, jobs and other facilities.

### History of ILP

- Under the **Bengal Eastern Frontier Regulation Act, 1873**, the British framed regulations restricting the entry and regulating the stay of outsiders in designated areas.
- This was to protect the Crown's own commercial interests by preventing "British subjects" (Indians) from trading within these regions.
- In 1950, the Indian government replaced "British subjects" with "Citizen of India". This was to address local concerns about protecting the interests of the indigenous people from outsiders belonging to other Indian states.

## 2) National Commission for Protection of Child Rights

### About NCPCR

- The National Commission for Protection of Child Rights is a **statutory body** established under the Commission for Protection of Child Rights Act, 2005.
- The commission works under the aegis of the **Ministry of Women and Child development**.
- NCPCR is mandated to function for the protection and promotion of child rights. It is also mandated to monitor the **implementation of the Protection of Children from Sexual Offences (POCSO) Act**.
- The Commission may inquire into complaints and take **suo motu** notice of matters relating to-
  - Deprivation and violation of child rights;
  - Non-implementation of laws providing for

- protection and development of children;
- Non-compliance of policy decisions, guidelines or instructions aimed at mitigating hardships to and ensuring welfare of the children and to provide relief to such children;

### Constitution

- The commission consist of the following members namely:-
  - A **chairperson** who, is a person of eminence and has done a outstanding work for promoting the welfare of children; and
  - **Six members**, out of which at least two are women, are appointed by the Central Government from amongst persons of eminence, ability, integrity, standing and experience in Education; Child health, care or related fields.

### Why in News?

- In order to foster sensitization regarding various aspects of the PM Cares for Children Scheme, NCPCR organized 4 virtual Regional Conclaves on the scheme recently.
- The PM Cares for Children Scheme was launched by the Prime Minister of India in 2021 to provide **comprehensive support for children who have lost both their parents or legal guardians or Adoptive Parents or Surviving Parents to the COVID-19 pandemic.**
- This Scheme enables the well-being of such children through health insurance, empowers them through education, and equips them for self-sufficient existence with financial support.

- The **Ministry of Women and Child Development** has been anchoring the Scheme, which is leveraging technology to identify, register and support the children through an online portal.

## 3) Anti-Defection Law

### What is anti-defection?

- It is disqualification when a **member of parliament or legislature chooses to join another party** after being elected as some party.
- In **1985**, the **52nd amendment act** was passed by the Parliament to achieve this by introducing the **Tenth Schedule in the Constitution.**
- The law applies to **both Parliament and state assemblies.**

### Disqualification is done when:

- Member voluntarily gives up party membership;
- If he abstains from the direction given by the party's whip;
- If an **independent candidate** joins any political party after their election to legislature;
- If a **nominated member** joins a party after 6 months of his/her nomination.

### Exception

- If a **presiding officer**, after being elected, gives up party for impartiality then he is not disqualified. He can re-join the party after getting down from the post.
- The original act introduced in 1985 protected legislators from disqualification in cases where there was a **split** (with 1/3rd of members splitting) or **merger** (with 2/3rds of members merging) of a legislature party with another political party.
- The 2003 amendment to the law **deleted the one-third split**

**provision** which offered protection to defectors.

#### Deciding Authority

- The **Presiding officer** will be the final authority to decide the disqualification on the ground of anti-defection. The decision **can be challenged in court**.
- The law **does not specify a time period** for the Presiding Officer to decide on a disqualification plea.

#### Recommendations

- The **170th Law Commission report** underscored the importance of intra-party democracy by arguing that a political party cannot be a dictatorship internally and democratic in its functioning outside. The parties should listen to the opinions of the members and have discussions giving the freedom of speech and expression and promote inner-party democracy.
- **Justice Verma** in *Kihoto Hollohan judgment* said that tenure of the Speaker is dependent on the continuous support of the majority in the House and therefore, he does not satisfy the requirement of such independent adjudicatory authority. So there is a need for an **independent authority** to deal with the cases of defection.
- The **Election Commission** has recommended that decisions under the Tenth Schedule should be made by the **President/ Governor on the binding advice of the Election Commission**.
- In 2020, the **Supreme Court** held that ideally, Speakers should take a decision on a defection petition **within three months**, in the absence of exceptional reasons. The Court said Parliament should set up an **independent tribunal** headed by a retired judge of the higher

judiciary to decide defection cases swiftly and impartially.

#### Why in News?

- Vice-President M. Venkaiah Naidu said the time has come to amend the anti-defection legislation in the country to plug existing loopholes.
- Stating that there is **no clarity in the law about the timeframe for the action** of the House Chairperson or Speaker in the anti-defection cases, he said that some cases are taking six months and some even three years. There are cases that are disposed off after the term is over.
- He added that these anti-defection cases can be disposed of in **three months**.

### 4) The Criminal Procedure (Identification) Bill, 2022

#### What's in the news?

- The Parliament has passed The **Criminal Procedure (Identification) Bill, 2022** which seeks to **repeal The Identification of Prisoners Act, 1920**.
- The over 100-year-old Act's scope was limited to capturing of finger impression, foot-print impressions and photographs of convicted prisoners and certain categories of arrested and non-convicted persons on the order of a Magistrate.
- The new bill will allow police and prison authorities to collect, store and analyse physical and biological samples including retina and iris scans of convicted, arrested and detained persons.

#### Key Features of the Bill

- The Bill expands:
  - the type of data that may be collected,
  - persons from whom such data may be collected, and

- the authority that may authorise such collection.

### Comparison of key provisions of the 1920 Act and the 2022 Bill:

Provisions	Identification of Prisoners Act, 1920	Changes in the 2022 Bill
1. <b>Data permitted to be collected</b>	<ul style="list-style-type: none"> <li>Fingerprints, foot-print impressions, photographs</li> </ul>	<ul style="list-style-type: none"> <li>Adds: (i) biological samples, and their analysis, (ii) behavioural attributes including signatures, handwriting, and (iii) examinations under sections 53 and 53A of CrPC (includes blood, semen, hair samples, and swabs, and analyses such as DNA profiling)</li> </ul>
2. <b>Persons whose data may be collected</b>	<ul style="list-style-type: none"> <li>Convicted or arrested for offences punishable with rigorous imprisonment of one year or more;</li> <li>Persons ordered to give security for good behaviour or maintaining peace;</li> <li>Magistrate may order in other cases collection from any arrested person to aid criminal investigation.</li> </ul>	<ul style="list-style-type: none"> <li>Convicted or arrested for any offence. However, <b>biological samples may be taken forcibly only from persons arrested for offences against a woman or a child, or if the offence carries a minimum of seven years imprisonment.</b></li> <li>Persons detained under any <b>preventive detention law</b>;</li> <li>On the order of Magistrate, from <b>any person</b> (not just an arrested person) to aid investigation.</li> </ul>
3. <b>Persons who may require/ direct collection of data</b>	<ul style="list-style-type: none"> <li>Investigating officer, officer in charge of a police station, or of rank Sub-Inspector or above;</li> <li>Magistrate.</li> </ul>	<ul style="list-style-type: none"> <li>Officer in charge of a police station, or of rank Head Constable or above. In addition, a Head Warder of a prison;</li> <li>Metropolitan Magistrate or Judicial Magistrate of first class. In case of persons required to maintain good behaviour or peace, the Executive Magistrate.</li> </ul>



### Other Key Provisions

- The **National Crime Records Bureau (NCRB)** will be the central agency to maintain the records. It will **share the data with law enforcement agencies**. Further, states/UTs may notify agencies to collect, preserve, and share data in their respective jurisdictions.
- The data collected **will be retained in digital or electronic form for 75 years**. Records will be **destroyed in case of persons who are acquitted** after all appeals, or released without trial. However, in such cases, a Court or Magistrate may direct the retention of details after recording reasons in writing.

## 5) National Food Security Act

### About NFSA

- The National Food Security Act, 2013 (NFSA) provides for **food and nutritional security** in the human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices for people to live a life with dignity and for matters connected therewith or incidental thereto.
- The Act is in line with **Goal Two of the Sustainable Development Goals** (which seeks sustainable solutions to end hunger in all its forms by 2030 and to achieve food security) set by the United Nations General Assembly.
- Schemes such as the **Mid-Day Meal Scheme (MDM)**, the **Public Distribution System (PDS)**, and the **Integrated Child Development Services (ICDS)** are included under the Act.
- The implementation of the scheme comes under the ambit of the **Ministry of Consumer Affairs, Food and Public Distribution**.

### Key Features

- The Act legally entitled up to **75% of the rural population and 50% of the urban population** to receive subsidized foodgrains under the **Targeted Public Distribution System (TPDS)**.
- The eligible persons will be **entitled to receive 5 Kgs of foodgrains per person per month at subsidised prices of Rs. 3/2/1 per Kg for rice/wheat/coarse grains**. The existing **Antyodaya Anna Yojana (AAY)** households, which constitute the poorest of the poor, will continue to receive 35 Kgs of foodgrains per household per month.
- About two-thirds of the population, therefore, is covered under the Act to receive highly subsidized foodgrains.
- The Act also has a special focus on the nutritional support to women and children. **Pregnant women and lactating mothers** will be entitled to meals and **maternity benefits of not less than Rs 6000**.
- **Children upto 14 years of age** will be entitled to nutritious meals as per the prescribed nutritional standards. In case of non-supply of entitled foodgrains or meals, the beneficiaries will receive **food security allowance**.
- The Act also contains provisions for setting up of **grievance redressal mechanism** at the District and State levels
- The **eldest women of the household** of age 18 years or above will be the head of the household for the purpose of issuing ration cards.

### Implementation

- It is operated under the **joint responsibility of the Central and the State/Union Territory (UT) Governments**.

- The Central Government is responsible for procurement, allocation and transportation of food grains up to the designated depots of the Food Corporation of India.
- States/UTs hold the operational responsibilities for allocation and distribution of food grains.
- The NFSA currently covers **81 crore people** which was determined on the basis of the **2011 census**, and has not been revised since the law was passed in 2013.

#### Why in News?

- The Central government has said that the Food Corporation of India's (FCI) **economic cost** (MSP to farmers, storage, transportation and other costs) of rice and wheat for 2022-23 is Rs 36.70 and Rs 25.88 per kg, respectively.
- The central issue prices for a kg of rice, wheat and coarse grains under NFSA are Rs 3, Rs 2, Rs 1 respectively and have **not been revised since 2013**.

# International Relations

## 1) South China Sea dispute

### Background

- Currently, among the most disputed topics in the world, in the South China Sea (SCS) dispute, the governments of **six countries** (Vietnam, Indonesia, Philippines, Brunei, Malaysia and China) claim that they are the rightful owner of **Paracel and Spratly islands**, and among them, China has been the most aggressive one.
- The disputed sea is composed of approximately 100 to 230 islands

wherein small islands called islets are usually included in it.

- The Chinese government claims an enormous area under what is known as the “**nine-dash line**” that is over 2000 km long, starting from mainland China and reaching waters close to Indonesia and Malaysia. China maintains that the area has been under Chinese rule since ancient times.
- China has been building military bases on small islands and also expanding the area of islands artificially.



### Importance of the South China Sea

- This sea route, connecting Asia with Europe and Africa, is an **important trade passageway** for international trade.
- The **Strait of Malacca**, along with the **Lombok Strait** and **Sunda strait** are all connected with SCS and responsible for oil and LNG imports by major countries such as China, Japan, Indonesia, South Korea, and others from Gulf countries.
- It is estimated that around 15 million barrels each day are transported through the Strait of Malacca, making it the **second busiest strait** after the Strait of Hormuz in terms of oil

transportation with respect to volume.

- The economy of China depends upon the oil import in which 80% of the oil is transported through the Strait of Malacca and then through SCS to China, which means that full control and easy access through this strait is the justification behind economic prosperity of the Chinese nation.
- Apart from the strategic importance of the SCS, this region is also blessed with **large deposits of natural resources beneath the sea**.
- Aside from oil and gas reserves, this region is also gifted with **one-third of the total marine**

**biodiversity of the Earth**, which means that substantial revenue can also be generated through **fishing** alone.

#### PCA award

- Following the dispute, the Philippines filed a case against China in the **Permanent court of arbitration (PCA)** under the dispute settlement provisions of the **UNCLOS**.
- In 2016, a tribunal of the PCA issued its **ruling against China's claims in the South China Sea**. The tribunal's five arbitrators ruled overwhelmingly in the Philippines' favor after finding that China had violated the sovereign rights of the Philippines in its exclusive economic zone.
- However, **China refused to participate in the arbitration and rejected the outcome**.

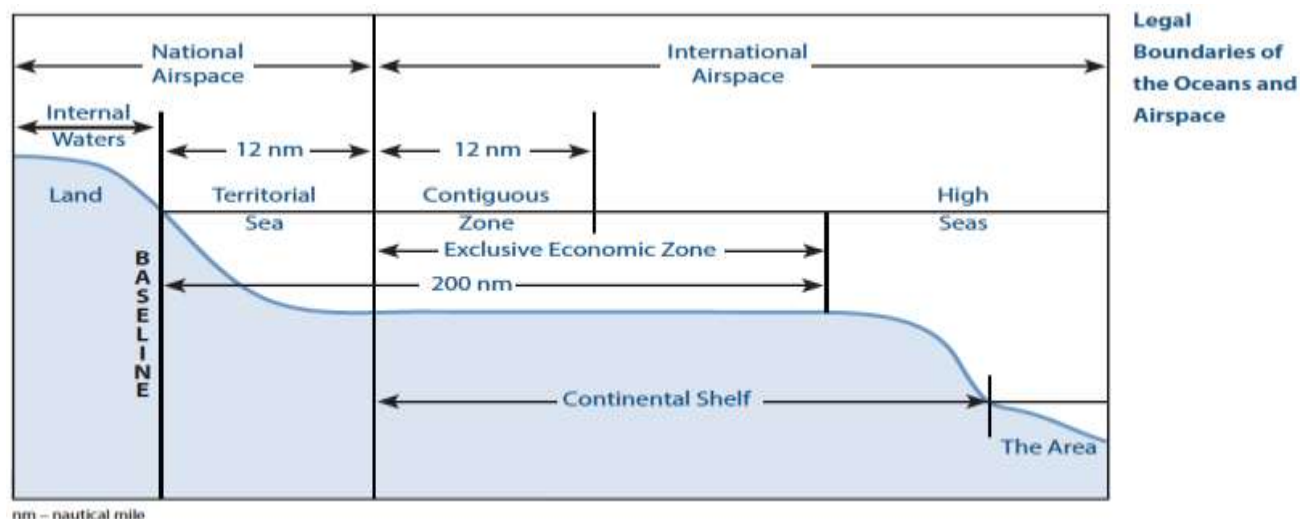
#### Why in News?

- The U.S. has recently said that China has fully militarised at least three of several islands it built in the disputed South China Sea, arming them with anti-ship and anti-aircraft missile systems, laser and jamming equipment and fighter jets in an increasingly aggressive move that threatens all nations operating nearby.
- Beijing maintains that its military profile is purely defensive, arranged to protect what it says are

its sovereign rights. But after years of increased military spending, China now boasts the world's second-largest defence budget after the U.S. and is rapidly modernising its force with weapons systems.

#### Related information About UNCLOS

- The United Nations Convention on the Law of the Sea (UNCLOS), also known as the **Law of the Sea Treaty**, is an international treaty which was adopted and signed in 1982. The Convention was formed to ensure freedom of shipping navigation at the sea.
- The Convention has created three new institutions on the international scene:
  - **the International Tribunal for the Law of the Sea,**
  - **the International Seabed Authority,**
  - **the Commission on the Limits of the Continental Shelf.**
- **India** is a party to UNCLOS.
- UNCLOS classifies marine areas into five zones. They are:
  - Territorial sea
  - Contiguous zone
  - Exclusive economic zone
  - Continental shelf
  - High Sea



### Territorial sea

- According to UNCLOS, the territorial sea can be defined as the area which extends up to **12 nautical miles** from the baseline of a country's coastal state. The territorial sea is under the jurisdiction of that particular country; however, foreign ships (both merchant and military) ships are allowed passage through it.
- This type of passage of foreign ships is known as an **innocent passage**. However, the right to the innocent passage can be suspended if there is a threat to the security of the coastal state.

### Contiguous Zone

- The contiguous zone can be defined as the belt which **extends 12 nautical miles beyond the territorial sea limit**.
- A coastal state's control on this area is limited to prevention of actions which can infringe its customs, fiscal, and immigration laws. It can also act if any activity in the contiguous zone threatens regulations in the territorial sea.

### Exclusive economic zone

- The exclusive economic zone can be defined as a belt of water which **extends up to 200 nautical miles** from the baseline of the coastal

state. Thus it **includes both territorial sea and contiguous zone**.

- The exclusive economic zone provides the coastal state **control over all economic resources** such as fishing, mining, oil exploration, and marine research.
- The coastal state also has jurisdiction regarding protection and preservation of natural resources and marine environment.

### Continental Shelf

- The continental shelf can be defined as the area whose outer limit **shall not exceed 350 nautical miles from the baseline or shall not exceed 100 nautical miles from the 2500 meters isobath**.
  - *Isobath is a line connecting points of equal underwater depth.*
- The coastal state has exclusive rights for exploring and exploiting its natural resources in this area. The state also has the exclusive rights to authorize and regulate drilling on the shelf for all purposes.

### High Seas

- High seas can be defined as the part of the sea that is **not included** in the exclusive economic zone, in the territorial sea, or in the internal

waters of a coastal state or archipelagic waters of an archipelagic state.

- High seas are **open to all states** for freedom of navigation, freedom of overflight, freedom to construct artificial islands installation, freedom of fishing, and freedom of scientific research.

#### About PCA

- The Permanent Court of Arbitration was established by the **Convention for the Pacific Settlement of International Disputes**, concluded at The Hague in 1899 during the first Hague Peace Conference.
- The 1899 Convention was revised at the second Hague Peace Conference in 1907.
- The PCA is not a court in the traditional sense but provides services of an **arbitral tribunal** to resolve disputes that arise out of international agreements between member states, international organizations or private parties.
- The cases span a range of legal issues involving territorial and maritime boundaries, sovereignty, human rights, international investment, and international and regional trade.
- The PCA has **no sitting judges: the parties themselves select the arbitrators**.
- The PCA is an official United Nations Observer. It is headquartered in The Hague, Netherlands.

#### Members

- The PCA has more than 120 Contracting Parties which have acceded to one or both of the PCA's founding conventions (1899 and 1907 Conventions).
- **India is a party** to the PCA according to the convention of 1899.

## 2) Raisina Dialogue

### What is the Raisina Dialogue?

- The Raisina Dialogue is **India's flagship conference on geopolitics and geoeconomics**, held annually since 2016. It is jointly organised by the **Ministry of External Affairs and the Observer Research Foundation (ORF)**.
  - *ORF is an independent global think tank based in Delhi.*
- It is a multilateral conference committed to addressing the most challenging issues facing the global community. Every year, global leaders in policy, business, media and civil society are hosted in **New Delhi** to discuss cooperation on a wide range of pertinent international policy matters.
- The Dialogue is structured as a multi-stakeholder, cross-sectoral discussion, involving heads of state, cabinet ministers and local government officials, as well as major private sector executives, members of the media and academics.

### Why in News?

- The seventh edition of the Raisina Dialogue, India's flagship multilateral foreign policy and geoeconomics conference, was held recently.
- This year's Raisina Dialogue was held in person in New Delhi after a gap of two years due to the coronavirus pandemic. The theme was **"Terranova: Impassioned, Impatient, and Imperilled"**.

## 3) Fishing for workable solutions in the Palk Bay

### Context

- After a gap of 15 months, the **India-Sri Lanka Joint Working Group**



(JWG) on fisheries held its deliberations recently.

- As sections of fishermen from the Palk Bay bordering districts of Tamil Nadu continue to transgress the International Maritime Boundary Line (IMBL), cases of many of them getting arrested and their boats being impounded by the Sri Lankan authorities continue.

### Issue with Trawling

- The use of **mechanised bottom trawlers** is an issue that has become a bone of contention between the fishermen of the two countries.
- This method of fishing, which was once promoted by the authorities in India, is now seen as being **extremely adverse to the marine ecology**, and has been acknowledged so by India.
- At the same time, the fishermen of Tamil Nadu experience a genuine problem, the **lack of fishing areas** consequent to the demarcation of the International Maritime Boundary Line in 1974.
- If they confine themselves to Indian waters, they find the area available for fishing full of rocks and coral reefs besides being shallow.
- Under the **Tamil Nadu Marine Fishing Regulation Act, 1983**, mechanised fishing boats can fish only beyond 3 Nautical miles from the coast. This explains the trend of the fishermen having to cross the IMBL frequently.

### Fishermen level talks

- Indian fishermen can present a road map for their transition to **deep sea fishing or alternative methods of fishing**, while the Sri Lankan side has to take a pragmatic view that the transition cannot happen abruptly.
- The Central government has put in place **schemes for modification**

**and buyback of trawlers to encourage fishermen to shift to deep-sea fishing.** However, these appear to be moving at a snail's pace.

- The Tamil Nadu fishermen have to commit themselves to a **short and swift transition** for which the governments in India (Central and State) have to come forward to perform the role of guarantors.

### Deep-sea fishing

- India will have to **modify its scheme on deep sea fishing** to accommodate the concerns of its fishermen, so that they take to deep sea fishing without any reservation. The revised scheme has to satisfactorily absorb the running cost.
- There is a compelling need for the Central and State governments to implement in Tamil Nadu the **Pradhan Mantri Matsya Sampada Yojana** (*Refer Pulse December 2021 edition*) in a proactive manner.
- The scheme, which was flagged off two years ago, covers **alternative livelihood measures** too including seaweed cultivation, open sea cage cultivation, and sea/ocean ranching.
- It is a welcome development that the JWG has agreed to have **joint research on fisheries**, which should be commissioned at the earliest. Such a study should cover the extent of the adverse impact of bottom trawling in the Palk Bay region.

### Way Forward

- The two countries should explore the possibility of establishing a **permanent multi-stakeholder institutional mechanism** to regulate fishing activity in the region.
- A number of options are available to make the Palk Bay not only free

of troubles but also a model for collaborative endeavours in fishing.

## Art and Culture

### 1) Sangeet Natak and Lalit Kala Akademi Awards

#### Sangeet Natak Akademi

- Sangeet Natak Akademi, the **apex body in the field of performing arts in the country**, was set up in **1953** for the preservation and promotion of the vast intangible heritage of India's diverse culture expressed in forms of music, dance and drama.
- It is currently an **autonomous body within the Ministry of Culture**, and its initiatives and programmes are **wholly funded by the government**.
- The Akademi creates and oversees institutions and programmes in the performing arts that are of national significance, like the National School of Drama in New Delhi, Jawaharlal Nehru Manipur Dance Academy in Imphal, supporting **Kutiyattam** (Kerala's Sanskrit theatre), Eastern India's **Chhau dances**, **Assamese Sattriya** customs, and other national projects.

#### Sangeet Natak Akademi Awards

- The Sangeet Natak Akademi Awards are national honours bestowed by the Government on **performing artists as well as teachers and scholars in the field of performing arts**.
- The awards are given in the categories of **music, dance, and theatre**. In addition, one category is reserved for **traditional, folk, and tribal dance, music, theatre and puppetry**.

#### Sangeet Natak Akademi Fellowship

- The Sangeet Natak Akademi Fellowship is the highest honour conferred by Sangeet Natak Akademi without distinction of

nationality, race, caste, religion, creed, or sex.

- The criteria restricts **any person below the age of 50** to ordinarily be considered for the honour.

#### Lalit Kala Akademi

- Lalit Kala Akademi (National Academy of Art) was set up in 1954 as an **autonomous body within the Ministry of Culture**. The Akademi was given **statutory authority** in 1957 under the **Societies Registration Act 1860**.
- The objective of the Akademi is to foster and coordinate activities in the **sphere of visual arts** and through this the Akademi wants to promote the cultural unity of the country.
- The Lalit Kala Akademi promotes study and research in the **fields of creative arts such as painting, sculpture, graphics, etc.**

#### Lalit Kala Akademi Awards

- The Akademi has instituted several awards and honours to be conferred on artists in recognition for their outstanding work in the field of art.
- The Akademi also awards a maximum number of 40 scholarships every year. The registered scholars under this scheme are awarded **Rs.20,000/- per month** for a period of twelve months (one year). The **minimum age limit for the scholars is 21 years and maximum is 35 years**.

#### Why in News?

- Eminent artists were presented the Sangeet Natak Akademi and Lalit Kala Akademi Awards and Fellowships by Vice-President M. Venkaiah Naidu.

## 2) Guru Tegh Bahadur

### About

- Tegh Bahadur was born in Amritsar on April 21, 1621 to Mata Nanki and **Guru Hargobind**, the sixth Sikh guru, who raised an army against the Mughals and introduced the **concept of warrior saints**.
- As a boy, Tegh Bahadur was called **Tyag Mal** because of his ascetic nature. He was only 13 when he distinguished himself in a battle against a Mughal chieftain. His bravery and swordsmanship in the battle earned him the name of **Tegh Bahadur**.
- Tegh Bahadur is revered by the Sikhs as **Srisht-di-Chadar (Protector of humanity)**.
- Many hymns written by Guru Tegh Bahadur were included in the **Guru Granth Sahib**.
- It was his efforts that started **construction of community water wells and langars** (community kitchen for the poor and hungry). He also established several '**manjis**' or preaching centres of the Sikh faith.
- He created the **settlement of Chak-Nanki in Punjab**, which later became a part of Punjab's Anandpur Sahib, a holy city of the Sikhs.
- Guru Tegh Bahadur stood up against forcible conversions by the Mughals and was assassinated in Delhi in 1675 on the orders of **Mughal Emperor Aurangzeb**.
- His nine-year-old son, **Guru Gobind Singh** took over after him and structured the Sikh community into a formalized community with a separate symbol known as **Khalsa** (Martial) identity.

### Why in News?

- The Prime Minister gave an address from the Red Fort to mark the celebrations of the 400th **Parkash Purab of Guru Tegh Bahadur**.
- Guru Tegh Bahadur Jayanti or Parkash Purab is one of the most important festivals in the Sikh community. It is celebrated to mark the birth of Guru Tegh Bahadur.

## 2) Prehistoric Settlement at Attappadi

### What's in the news?

- The discovery of several prehistoric artefacts and archaeological remains along the banks of three rivers flowing through the **Attappady hills straddling Kerala and Tamil Nadu, indicates the presence of a mature settlement**.
- Archaeologists have discovered several stone tools, inhabited caves, menhirs, cists or burial chambers, stone circles, burial urns, black and red ware pottery, terracotta images, stone carvings, and granite inscriptions which **points to prehistoric human settlements in the predominantly tribal area of Attappady**.
- The archaeological discoveries were made from different places along the banks of the rivers Bhavani, Siruvani, and Kodumkara Pallam or Anakkatti.

### About Attappadi

- Attappadi is among the biggest tribal settlements along the Attappadi valley in Palakkad district in **Kerala**.
- The **Bhavani River** plays an integral part of tribal life.
- Much of the area is currently inhabited by the **tribes of Irulas, Mudugas and Kurumbar**.

# Defence

## 1) iDEX Prime

### About iDEX

- The iDEX initiative of the **Department of Defence Production** under the **Ministry of Defence** was launched in 2018.
- It was launched to create an **ecosystem to foster innovation and technology development in Defence and Aerospace** by engaging Industries including MSMEs, start-ups, individual innovators, R&D institutes & academia.
- iDEX also aims to provide **grants/funding** and other support to carry out R&D which has good potential for future adoption for Indian defence and aerospace needs.
- iDEX will be funded and managed by a '**Defence Innovation Organization (DIO)**' which has been formed as a '**not for profit**' company as per Section 8 of the Companies Act 2013 for this purpose.

### Why in News?

- The Defence Minister launched **iDEX Prime** and the sixth **Defence India Start-up Challenge (DISC-6)** meant to encourage defence start-ups.
  - The iDEX-Prime aims to support projects, requiring support beyond Rs 1.5 crore up to Rs 10 crore, to help ever-growing start-ups in the defence sector.
  - The Defence India Start-up Challenge aims at supporting Startups/MSMEs/Innovators to create prototypes and/or commercialize products/solutions in

National Defence and Security.

## 2) INS Vagsheer

### About Project 75

- In 1999, the **Cabinet Committee on Security** had approved a plan for the Indian Navy to **indigenously build and induct submarines by 2030**. It was broken down in **two phases** — the **P-75 and P-75I**.
- Under the first phase of Project 75 (P75), signed in 2005, India and France signed a \$3.75 billion **technology transfer deal** for building **six Scorpene class submarines**. The executing company on the Indian side was **Mazgaon Docks Ltd**, and on the French side, it was **DCNS**, which is now called **Naval Group**.
- At present the Navy has four submarines from this project—**INS Kalvari**, **INS Khanderi** (commissioned in 2019), **INS Karanj** and **INS Vela** (commissioned in 2021). The fifth, '**Vagir**', which was launched in 2020, is undergoing sea trials and is likely to be commissioned before the end of 2022.

### What are Scorpene-class submarines?

- The Scorpene-class submarines are the **most advanced conventional submarines with superior stealth features**, such as advanced acoustic silencing techniques, low radiated noise levels and ability to attack with precision-guided weapons on board.
- They are designed to **operate in all theatres, with enhanced interoperability with other components of a naval task force**.

- Scorpene class submarines can undertake **multifarious missions** such as anti-surface warfare, anti-submarine warfare, intelligence gathering, mine-laying and area surveillance.
- With 350 meters diving depth, it can travel upto 20 knots speed (37.04 kmph) and submerged upto 21 days.

#### Why in News?

- The sixth and last of the French Scorpène-class submarines, **INS Vagsheer**, was launched into water at the Mazagon Docks Limited (MDL) in Mumbai. Vagsheer is named after the **sand fish**, a deep sea predator of the Indian Ocean.
- Vagsheer is a **diesel attack submarine**, designed to perform offensive operations across the spectrum of naval warfare including anti-surface warfare, anti-submarine warfare, intelligence gathering, mine laying and area surveillance.

#### Related Information

##### Project-75 (I)

- In 2021, the Defence Acquisition Council (DAC), chaired by Defence Minister Rajnath Singh, formally cleared India's ambitious but long-delayed Rs.43,000-crore project for construction of **six conventional submarines with better sensors and weapons and the Air Independent Propulsion System (AIP)**. AIP will enable them to stay underwater for longer periods of time, enhancing their combat capabilities and providing the Navy with added underwater firepower.
- The programme, codenamed **Project-75 (I)**, with the "I" standing for India, is aimed at India's capability to progressively build indigenous capabilities in the private sector to design, develop and manufacture complex weapon systems for the future needs of the Armed Forces.
- Project-75(I) is currently in the **request for proposal stage**.



## Miscellaneous

### 1) Healthcare as an Optional Public Service

#### Context

- Universal Health Care (UHC) has become a well-accepted objective of public policy around the world. The basic idea of UHC is that **no one should be deprived of quality health care for the lack of ability to pay.**
- It has even been largely realised in many countries, not only the richer ones but also a growing number of other countries such as **Brazil, China, Sri Lanka and Thailand.**
- Thailand made a decisive move towards UHC at a time (20 years ago) when their per capita GDP was no higher than India's per capita GDP today.

#### Routes to UHC

- UHC typically relies on one or both of two basic approaches: **public service and social insurance.**
- In the first approach, health care is provided as a **free public service**, just like the services of a fire brigade or public library.
- The second approach allows private as well as public provision of health care, but the costs are mostly borne by the **social insurance fund(s)**, not the patient, so the result is similar: everyone has access to quality health care.
- Social insurance is one where insurance is **compulsory and universal, financed mainly from general taxation, and run by a single non-profit agency** in the public interest.
- This single-payer system makes it easier for the state to bargain for a good price from health-care providers.

#### Challenges in UHC

- Even in a system based on social insurance, **public service plays an essential role.** In the absence of public health centres, dedicated not only to primary health care but also to preventive work, there is a danger of patients rushing to expensive hospitals every other day. This would make the system **wasteful and expensive.**
- As it is, **containing costs** is a major challenge with social insurance, because patient and health-care provider have a joint interest in expensive care — one to get better, the other to earn.
- One possible remedy is to require the patient to bear part of the costs (a "**co-payment**"), but that conflicts with the principle of UHC. Recent evidence suggests that **even small co-payments often exclude many poor patients from quality health care.**
- Another challenge with social insurance is to **regulate private health-care providers.**

#### Healthcare as an Optional Public Service (HOPS)

- A new framework which might be called "Healthcare as an Optional Public Service" (HOPS) would be a possible route to UHC for India today.
- The idea is that everyone would have a **legal right to receive free, quality health care in a public institution if they wish.** It would **not prevent anyone from seeking health care from the private sector at their own expense.** But the public sector would **guarantee decent health services to everyone as a matter of right, free of cost.**
- In a sense, this is what some Indian States are already trying to do. In

**Kerala and Tamil Nadu**, for instance, most illnesses can be satisfactorily treated in the public sector, at little cost to the patient.

- There is a thriving private sector too, begging for better regulation and restraint. But health care of decent quality is available to **everyone as an optional public service**.
- HOPS would be a big step toward UHC. Further, it is likely to become more egalitarian over time, as the public sector provides a growing range of health services. If quality health care is available for free in the public sector, most patients will have little reason to go to the private sector.

#### What about social insurance?

- It could play a **limited role** in this framework, to help **cover procedures that are not easily available in the public sector** (e.g., high-end surgeries). Social insurance, however, carries a **risk of tilting health care towards expensive tertiary care, and also towards better-off sections of the population**.
- The main difficulty with the HOPS framework is to **specify the scope of the proposed health-care guarantee, including quality standards**. HOPS requires not only health-care standards but also a **credible method to revise these standards over time**.

#### Way Forward

- **Tamil Nadu** is well placed to make HOPS a reality under its proposed **Right to Health Bill**. Tamil Nadu is already able to provide most health services in the public sector with good effect.
- A Right to Health Bill would empower patients and their families to demand quality services, helping to improve the system

further. It would act as a model and inspiration for all Indian States.

## 2) Global Network of Silk Cities

### What's in the news?

- **Bengaluru** has become the first Indian city to get into the global network of silk cities, an international network of cities and silk metropolises.

### About the Global Network of Silk Cities

- The network was created in 2019 involving public and private sectors. It spans nine nations and thirteen cities.
- The Network **assists artisans and craftsmen in exchanging information, establishing trade relationships, and learning about various crafting skills**.

### Silk In India

- India has a rich and complex history in silk production and its silk trade which dates back to the 15th century.
- Sericulture industry provides employment to approximately 8.7 million persons in rural and semi-urban areas in India.
- India has the unique distinction of being the **only country producing all the five known commercial silks, namely, mulberry, tropical tasar, oak tasar, eri and muga**, of which muga with its golden yellow glitter is unique and prerogative of India.
- **North East** has the unique distinction of being the **only region producing four varieties of silk** viz., Mulberry, Oak Tasar, Muga and Eri. Overall the North Eastern region contributes 18% of India's total silk production.
- **India is the second largest producer of silk** in the world and also the **largest consumer of silk in the world**. Among the four varieties of silk produced in 2020-

21, **Mulberry** accounted for **70.72%**.

- Tamil Nadu, Karnataka, Andhra Pradesh, Assam, West Bengal and Jharkhand are major silk producing states in the country.
- The **Central Silk Board**, a **statutory body**, under the administrative control of the **Ministry of Textiles**, has been entrusted with the overall responsibility of developing the silk industry in India.

#### Geographical Indications of Indian Silk

1. Baluchari Saree – West Bengal
2. Salem Silk – Tamil Nadu
3. Arani Silk – Tamil Nadu
4. Molakalmuru Sarees – Karnataka
5. Ilkal Sarees – Karnataka
6. Muga Silk – Assam
7. Orissa Ikat – Odisha
8. Kancheepuram Silk – Tamil nadu
9. Mysore Silk – Karnataka
10. Chanderi Fabric – Madhya Pradesh.

### 3) The functioning of the Enforcement Directorate

#### Context

- The Enforcement Directorate (ED) is in the news now and often.

#### About ED

- It was constituted in 1956 for handling Exchange Control Laws violations under the **Foreign Exchange Regulation Act (FERA)**. At present, the **administrative control** of the Enforcement Directorate is with the **Department of Revenue, Ministry of Finance**.
- The ED today is a multi-dimensional organisation investigating economic offences under the **Prevention of Money Laundering Act (PMLA)**, **Fugitive Economic Offenders Act**, **Foreign Exchange Management Act** and **FERA**.

#### Powers of ED

- The PMLA was brought in to **prevent parking of money outside India and to trace out the layering and the trail of money**. The ED got its power to investigate these crimes under Sections 48 and 49 of PMLA.
- Whenever any offence is registered by a local police station, which has generated **proceeds of crime over and above ₹1 crore**, the ED steps in. The ED can also carry out search (property) and seizure (money/documents) if it suspects money has been laundered.
- A person shall be guilty of the offence of money-laundering, if such person is found to have directly or indirectly attempted to indulge or knowingly assist a party involved in one or more of the following activities — **concealment; possession; acquisition; use; or projecting as untainted property; or claiming as untainted property in any manner.**

#### Can the ED investigate cases of money laundering retrospectively?

- Since the PMLA was enacted only in 2005, **any ill-gotten property acquired before the year 2005 has no case under PMLA.**