

UPSC COACHING THAT GIVES YOU UNIVERSITY DEGREE



# TATHASTU

Institute of Civil Services



CURRENT AFFAIRS May Month 2022

## Table of Contents

<b>Editorials of the Month</b>	
1.	Are Freebies affecting the Economic Growth of India?
2.	Blueprint for Semicon Diplomacy
3.	India-EU FTA
4.	Integrating MSME's into Global Value Chains
5.	Poverty in Rural India – How did it come down?
6.	How to give Manufacturing a Leg-up?
7.	The Multiple Crises in Indian Universities
8.	Long Term Plan needed to combat Heat Waves
9.	Making Agri-Tourism a Sustainable Business
10.	A twofold approach to win the war on Misinformation
11.	The Rise of AI Chips
12.	Justice, A click away

<b>GENERAL STUDIES – 1</b>	
<b><u>HISTORY &amp; CULTURE</u></b>	
1.	Basava Jayanti
2.	Rakhigarhi
3.	Martand Sun Temple
4.	Gopal Krishna Gokhale
5.	Excavations of Iron in Tamil Nadu
6.	Raja Ram Mohan Roy
7.	Anangpal II
8.	PM Modi's Gifts for his QUAD colleagues
<b><u>SOCIETY</u></b>	
1.	Bhil Pradesh
2.	Marital Rape
3.	ASHA Workers
<b><u>GEOGRAPHY</u></b>	
1.	The crisis in Jute Industry
2.	Twin Cyclones
3.	Onset of Monsoon
4.	Urban Heat Islands
5.	Assam Floods
6.	West Bank Settlements

<b>GENERAL STUDIES – 2</b>	
<b><u>POLITY &amp; GOVERNANCE</u></b>	
1.	Criminal Justice System
2.	Mandate Document for NCF

3.	Office of Profit
4.	World Press Freedom Index 2022
5.	Sedition Law
6.	Sealed Cover Jurisprudence
7.	J&K Delimitation
8.	Assam Cattle Preservation (Amendment) Act, 2021
9.	Centre vs Delhi
10.	Pardoning Power of President
11.	The Goa Civil Code
12.	Gatishakti Sanchar Portal
13.	The Places of Worship Act
14.	Article 142
15.	States have equal powers to make GST related laws – SC
16.	Inter-State Council
17.	Law Commission of India
<b><u>SOCIAL JUSTICE</u></b>	
1.	India's Civil Registration System Report
2.	Global Report on Food Crises 2022
3.	NFHS-5 National Report
4.	Global Report on Assistive Technology
5.	The State of Inequality in India Report
6.	National Achievement Survey 2021
7.	Supreme Court recognizes Sex Work as a 'Profession'
<b><u>INTERNATIONAL RELATIONS</u></b>	
1.	Chittagong Port
2.	India-Nordic Countries
3.	NATO membership for Finland and Sweden
4.	Sri Lanka's 21 <sup>st</sup> Constitutional Amendment
5.	Indo-Pacific Economic Framework
6.	Collective Security Treaty Organisation
7.	Indo-US Trade Ties

<b>GENERAL STUDIES – 3</b>	
<b><u>ECONOMY</u></b>	
1.	RBI's Report on Currency and Finance
2.	RBI Hikes Repo Rate and CRR
3.	Sagarmala Projects
4.	Indian Rupee tanks to an all-time low
5.	Low Wheat Procurement – Reasons and Impact
6.	FPI's exit and RBI Acquires Gold

7.	Food Inflation – Causes and Remedies
8.	Special Drawing Rights
9.	Total Factor Productivity
10.	Front Running
11.	Centre Scraps Import Duty on Crude Sunflower and Soybean Oils

### **SCIENCE & TECHNOLOGY**

1.	GPS Aided GEO Augmented Navigation
2.	Laser Communications Relay Demonstration
3.	India Semiconductor Mission
4.	Air Independent Propulsion Technology
5.	Open-RAN Architecture
6.	WHO Reforms
7.	HS200 Solid Rocket Booster for Gaganyaan Mission
8.	Voyager Mission
9.	Wild Poliovirus
10.	AstroSat
11.	Green Hydrogen
12.	Param Porul Supercomputer
13.	Coal Gasification
14.	West Nile Virus

### **ENVIRONMENT & ECOLOGY**

1.	Project Elephant
2.	State of World's Forest 2022
3.	State of World's Birds Report
4.	Tissue Culture Plants
5.	Green Manure
6.	Shallow and Deep Ecologism
7.	Global Food Policy Report: IFPRI
8.	'Pollution and Health' Report
9.	National Policy on Biofuels
10.	Seoul Forest Declaration
11.	Fostering Effective Energy Transition 2022
12.	E-Waste Management

### **INTERNAL SECURITY & DISASTER MANAGEMENT**

1.	International Conference on Disaster Resilient Infrastructure
2.	Pangong Tso
3.	NIA and UAPA

### **GENERAL STUDIES – 4**

1.	Case Study
----	------------

### **SHORT NEWS FOR PRELIMS**

1.	Sloth Bear
2.	Shigella Bacteria Outbreak
3.	AnangTal Lake
4.	Transnistria
5.	ISRO Mission to Venus
6.	Unique Disability ID Scheme
7.	Haflong Hindi
8.	Grey Slender Loris
9.	MonkeyPox
10.	World Food Prize 2022
11.	Bonded Manufacturing Scheme
12.	Integrated Battle Groups
13.	National Technology Day
14.	Gallantry Awards
15.	Amrit Sarovar Mission
16.	Great Indian Bustards
17.	Amalthea
18.	Bharat Tap Initiative
19.	Thomas Cup
20.	Devasahayam Pillai
21.	Kanheri Caves
22.	Reunion Island
23.	Nikhat Zareen
24.	Saint Vincent and the Grenadines
25.	Respiratory Syncytial Virus
26.	Project Wardec
27.	International Tea Day
28.	World Bee Day
29.	Ramban Tunnel
30.	Sangita Kalanidhi Awards
31.	Digital India Bhashini
32.	Lavender festival
33.	Sela Macaque
34.	International Booker Prize
35.	Seed Bomb
36.	Necipu Tunnel
37.	First Movers Coalition
38.	Thanjavur Doll
39.	UN Peacekeepers
40.	Red Sanders
41.	Sugar Production
42.	Param Ananta Supercomputer
43.	ATAGS
44.	Aarohan 4.0
45.	Operation Namkeen
46.	INS Surat and Frigate INS Udaygiri

# Editorials of the Month

## Are Freebies affecting the Economic Growth of India?

**News:** The recent economic and humanitarian crisis in Sri Lanka has prompted a debate on state's role. The government of Sri Lanka cut taxes across the board and provided several free goods. Its consequences are seen today, the economy has collapsed and the country was left with no choice but to default on its commitments.

The freebies given by Indian states has come under the lens now. Freebies have become an integral part of politics in India, be it for making promises to gain electoral gains or staying in power.

### What constitutes Freebies?

- Political parties promise to offer free electricity/water supply, monthly allowance to unemployed, daily wage workers and women as well as gadgets like laptops, smartphones etc. in order to secure the vote of the people.
- The states have become habituated to giving freebies, be it in the form of loan waivers or free electricity, cycles, laptops, TV sets and so on.

### Why Freebies are necessary?

- There are some examples which show that some expenditure outlays do have overall benefits such as the Public Distribution System, employment guarantee schemes, support to education and enhanced outlays for health, particularly during the pandemic. They help in increasing the productive capacity of the population and help build a healthier and a stronger workforce.
- States like Tamil Nadu and Bihar are known for giving women sewing machines, saris and cycles, but they buy these from budget revenues, contributing to the sales of these industries. It can be considered a boost for the supplier industry and not a wasteful expenditure, given the corresponding production.
- The states that have lower level of development for them such freebies become necessary. They are need/demand based and it becomes essential to offer the people such subsidies for their own upliftment.

### Possible negative impacts of Freebies:

- The freebies are against the principles of macroeconomic stability. It distorts expenditure priorities and outlays remain concentrated on subsidies of form or the other.
- Offering freebies, ultimately, has an impact on the public exchequer and most of the states of India do not have a robust financial health and often have very limited resources in terms of revenue.
- As per the Fiscal Responsibility and Budget Management (FRBM) rules the states can't borrow beyond their limits and any deviation has to be approved by the Centre and central bank. Therefore, while states have flexibility on how they choose to spend their money, they cannot in ordinary conditions exceed their deficit ceilings.
- It is against the principle of Free and Fair elections. It amounts to an unethical practice that is similar to giving bribes to the electorate.
- Giving away loan waivers in the form of freebies may have undesired consequences such as destroying the whole credit culture.
- When the freebies are about giving free power, or a certain quantum of free power, water and other kinds of consumption goods, it distracts outlays from environmental and sustainable growth, renewable energy and more efficient public transport systems.

- Freebies lower the quality and competitiveness of the manufacturing sector by detracting from efficient and competitive infrastructure that enable high-factor efficiencies in the manufacturing sector.

### Way Forward

- India is a large country and there is still a huge set of people who are below the poverty line. It is also important to have all the people accommodated in the development plan of the country. The judicious and sensible offering of freebies or subsidies that can be easily accommodated in the states' budget do not do much harm and can be leveraged.
- Ideally, a proportion of state expenditure should be earmarked to ensure better overall utilization of resources.
- Also, it becomes essential to distinguish between subsidy and freebies. Subsidies are justified and specifically targeted benefits that arise out of demands. Although every political party has a right to create subsidy ecosystems to give targeted needy people the benefits, there should not be a long-term burden on the economic health of the state or the central government.

## Blueprint for Semicon Diplomacy

**News:** Semiconductors are the basic building blocks that serve as the heart and brain of all modern electronics. These semiconductor chips are now an integral part of contemporary automobiles, household gadgets and essential medical devices such as ECG machines.

India in the last few years has put its special focus towards the domestic manufacturing of semiconductor chips in India. Although a plethora of initiatives in this regard are appreciable, it is not sufficient. To become self-sufficient in chip manufacturing India needs a Semiconductor Diplomacy Action Plan.

### Significance of Semiconductors:

- Semiconductor chips are the lifeblood of the modern information age. They enable electronic products to compute and control actions that simplify our lives.
- The process of making semiconductor chips is an example of how globally the world is interlinked. For example, it would not be difficult to imagine that the chip in the devices that we use are made by a Japanese engineer working on Dutch machinery in an American foundry in Taiwan to produce wafers which were shipped to Malaysia for packaging before being sent to India as a finished product.
- These semiconductor chips are the drivers for ICT (Information and Communication Technologies) development and one of the key reasons for the current flattening of the world.
- Semiconductors are used in critical infrastructures such as communication, power transmission etc., that have implications for national security.
- Development of the semiconductor and display ecosystem will have a multiplier effect across different sectors of the economy with deeper integration to the global value chain.

### What must India do to seize opportunities in this industry?

- Placing semicon diplomacy at the heart of India's foreign policy is essential both strategically and economically. The establishment of the value chain for semiconductors would ensure a multiplier effect on the entire economy.
- Further, since electronics items form one of the most highly imported items after oil and petroleum products, domestic production would be saving forex and reducing the balance of payments, especially vis a vis China.
- The current decade presents a unique opportunity to India as companies are looking to diversify supply chain and dependence on China. The chip shortages due to Covid-19 have hit automakers with a revenue loss of \$110 billion in 2021.
- The Russia-Ukraine conflict and its subsequent impact on raw materials supplies for semi-conductor value chain has also poised chipmakers to invest in strengthening the semicon supply chain.
- Semicon diplomacy is pivotal to India's Act East Policy, which aims to build resilient ties in the Asia Pacific region. Considering that the semiconductor manufacturing and testing bases are heavily concentrated in East Asia, the Act East policy provides an opportunity to connect and strengthen ties with key players in the region.

- We can also leverage the potential of QUAD here. For example, Australia being rich in raw materials required for semiconductors can be an important supplier to fill in India's deficits. The Quad Semiconductor Supply Chain Initiative is a good starting point; India shall push for a Quad Supply Chain Resilience Fund to immunise the supply chain from geopolitical and geographic risks.
- Strengthening engagement with semicon hubs such as Vietnam and Taiwan which are home to several technical research and academic institutes in the area of microchip design is equally important.

### Issues concerning Domestic Manufacturing of Semiconductors:

- **Concentration of industry in fewer geographies**
  - Nearly all leading edge (sub 10nm) semiconductor manufacturing capacity is limited to Taiwan and South Korea, with nearly 92% located in the former.
  - Further, 75% of the semiconductor manufacturing capacity is concentrated in East Asia and China.
  - The concentration of capacities poses many challenges, leading several countries to be vulnerable to a few.
- **Pursuing Western Companies**
  - Although India has a decent chip design talent, it never built up chip fab capacity. It would also require convincing western companies to set up advance silicon fabs in India.
  - However, the coming of several semiconductor fabs to India is not sufficient. It would also require maintaining a balance between pursuing globalisation in this field while ensuring that the vision of Atma Nirbhar Bharat is not undermined.

### Way Forward

- Considering that the global semiconductor market is projected to be \$1.2 trillion by 2030, India needs to be well-positioned to capture it.
- The recently announced Semicon India programme which provides \$10 bn fiscal support and other non-fiscal measures is a step in the right direction.
- Due to the USA's allegations on China for worsening Covid-19 and India-China conflict and recent developments because of it, numerous multinational companies (MNCs) are shifting their production out of China. This is the right opportunity to establish India as the right choice for setting up production houses for semicon chips.

## India-EU FTA

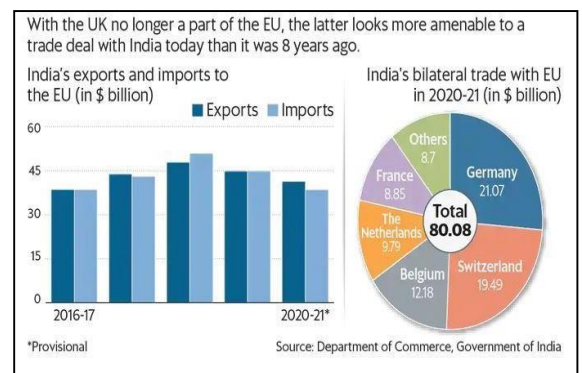
**News:** After signing comprehensive economic and trade agreements with the United Arab Emirates (UAE) and Australia, India has stepped up efforts to negotiate a free trade agreement (FTA) with the European Union (EU).

### India-EU Trade Ties

- The EU is India's third largest trading partner, accounting for 11.8% of India's total trade in 2020-21, after the US (12.61%) and China (12.59%).
- It is India's second-largest export destination after the US.
- India is the EU's tenth largest trading partner, accounting for 1.8% of the EU's total trade in goods in 2020.
- The EU is also a major source of FDI in India. Between April 2000 and March 2021, FDI flows from the EU to India totalled \$88.32 billion.

### How would an FTA be win-win for both?

- It will help Indian exporters gain competitive advantage in the EU markets while helping domestic manufacturers get cheaper access to imports from the EU.
- India's major exports to the EU include mineral fuels, mechanical appliances, electrical and electronic machineries, organic chemicals, automobiles and auto components, pharmaceuticals, precious stones, and iron and steel products.
- Post the Brexit, European Union is trying to clinch trade deals to diversify supply chains and find profitable exporting destinations for European companies.



- Intra-EU trade has remained stagnant, trade with UK has been hit as well due to institutional trade barriers. India will provide a large market that EU can have access to in that case.

#### Key issues:

- Visa requirements and work permits for Indian workers to the EU have been major bone of contention.
- Restrictions on transfer of personal data from the EU to other countries is a barrier for trade in digital services.
- A major point of contention has been the EU's demand for reduction in India's tariff rate. Earlier talks did not resolve issues involving trade in agriculture and services, digital trade, intellectual property rights, and commitments on sustainable development issues such as environmental, social, and labour rights.

#### Can a FTA be agreed upon?

- The president of the European Commission recently agreed to establish a trade and technology council to deliberate on data protection regulations and strengthening digital trade between India and the EU.
- PM Modi's recent visit to three key EU member countries is expected to further reinvigorate the FTA talks.

## Integrating MSMEs into Global Value Chains

**News:** The rapidly expanding Global Value Chains (GVCs) of multinational corporations (MNCs) are increasingly dominating international trade, which emerging economies like India can hardly afford to ignore.

The limited presence of Indian micro, small and medium enterprises (MSMEs) in the GVCs is a consequence of the negligible share of internationalised MSMEs, which is primarily due to a weak innovation base, owing to weak networks of MSMEs.

#### What are Global Value Chains?

- Global Value Chains (GVCs) refer to international production sharing, a phenomenon where production is broken into activities and tasks carried out in different countries.
- In recent decades, international trade is increasingly dominated by global value chains (GVCs) of multinational corporations (MNCs). More than two-thirds of international trade now takes place within such GVCs.
- Internationalization led by the steadily expanding GVCs has been rapidly reshaping the competitive environment of business in the global economy.

#### How does integration of MSMEs help in the GVC?

- **Employment Generation**
  - According to World Bank's World Development Report 2020, GVC's can help reduce poverty, and help augment growth and employment. However, it is possible only with reforms in developing countries and policy continuity in industrial economies.
  - The Economic Survey of India also highlighted that by participating in GVCs, India's manufacturing sector may witness an addition of four million jobs by 2025 thus contributing one-fourth of the total in value-added terms towards the \$5 trillion economy.
- **Productivity improvements**
  - GVC firms engaged in manufacturing activities show higher labor productivity than one-way traders or non-traders, after controlling for firm-level capital intensity.
- **Boosts Income**
  - Cross-country estimates suggest that a 1% increase in GVC participation can boost per-capita income by more than 1%, particularly when countries engage in limited and advanced manufacturing.
- OECD's Metro Model shows that localized regimes are more vulnerable to shocks, and therefore result in a significantly lower level of economic activity and fall in national incomes as compared to the interconnected regimes.

#### Factors that restrict GVC integration

- MSMEs' integration into GVCs depends crucially on access to finance, however, the credit supply shortage to MSMEs has been a concerning gap in India's MSME sector.
- Lack of working capital often disturbs MSME's day to day operations.

- Given that 95% of the MSMEs in India are in the informal sector, access to formal finance remains a significant constraint. Studies highlight that MSMEs as a whole receive less than 6% of bank credit.
- MSMEs are averse to adopting digital solutions due to lack of understanding and limited training.
- The number of applications filed by MSMEs on the delayed payment monitoring system MSME Samadhan has crossed the 1-lakh mark, amounting to over ₹26,000 crore.

#### **What steps can be taken to integrate MSME's into GVC?**

- A recent MSME digital readiness survey by PayPal highlighted that 29% of the MSMEs witnessed an increase in online customers and 32% experienced better payment solutions. The digital payment ecosystem holds immense potential for MSMEs by helping them expand their online customer base and enabling faster flow of funds.
- Banks can play the role of facilitator by helping arrange networking sessions with global companies.
- It becomes essential to provide training and generate more awareness among MSMEs about digitalisation of banking systems and their operational dynamics to make the digital transformation smoother. Moreover, a strong impetus towards greater digitalisation in finance is the need of the hour
- To integrate MSME's with GVC it becomes imperative to have reforms in the labour markets, trade infrastructure and improving overall business environment.

## **Poverty in Rural India – How did it come down?**

**News:** A recent World Bank Report has shown that extreme poverty in India more than halved between 2011 and 2019 – from 22.5 per cent to 10.2 per cent. The reduction was higher in rural areas, from 26.3 per cent to 11.6 per cent.

#### **Reasons behind reduction in poverty:**

- Poverty has reduced significantly due to government's efforts on improving ease of living of ordinary Indians through schemes such as Ujjwala Yojana, PM Awas Yojana, Swacch Bharat Mission, Jan Dhan Yojana and Mission Indradhanush.

#### **The contributing Factors include:**

- **Widened Coverage of Women**
  - The coverage of women under the Deendayal Antyodaya Yojana and Self Help Groups (SHG) increased from 2.5 crore in 2014 to over 8 crore in 2018 as a result of more than 75 lakh SHGs working closely with over 31 lakh elected panchayati raj representatives, 40 per cent of whom are women.
  - The PRI-SHG partnership catalysed changes that increased the pace of poverty reduction and the use of Aadhaar cleaned up corruption at several levels and ensured that the funds reached those whom it was meant for.
- **Identification of beneficiaries through SECC 2011**
  - Since deprivation was the key criterion in identifying beneficiaries, SC and ST communities got higher coverage and the erstwhile backward regions in Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh, Jharkhand, Odisha, Chhattisgarh, Assam, Rajasthan and rural Maharashtra got a larger share of the benefits.
  - Social groups that often used to be left out of government programmes were included and gram sabha validation was taken to ensure that the project reached these groups.
- **Basic Infrastructure**
  - Finance Commission transfers were made directly to gram panchayats leading to the creation of basic infrastructure like pucca village roads and drains at a much faster pace in rural areas.
  - The high speed of road construction under the Pradhan Mantri Gram Sadhak Yojana created greater opportunities for employment in nearby larger villages/census towns/kasbas by improving connectivity and enhancing mobility.
- **Availability of Credit**
  - The social capital of SHGs ensured the availability of credit through banks, micro-finance institutions and MUDRA loans.



- Livelihood diversification: The NRLM prioritised livelihood diversification and implemented detailed plans for credit disbursement.
- **Implementation of social sector schemes**
  - In the two phases of the Gram Swaraj Abhiyan in 2018, benefits such as gas and electricity connections, LED bulbs, accident insurance, life insurance, bank accounts and immunisation were provided to 63974 villages that were selected because of their high SC and ST populations.
- Through efforts such as social and concurrent audits it was assessed whether resources were fully utilized.
- It was observed that high amount of public funds were transferred to rural areas, including from the share of states and, in some cases, through extra-budgetary resources.

All these factors contributed to improved ease of living of deprived households and improving their asset base. A lot has been achieved, much remains to be done.

## How to Give Manufacturing a Leg-up

**News:** India has a great scope and potential in manufacturing, given its demographic dividend and reasonably cheap labour. However, larger investments, upskilling of workforce and upgrading infrastructure are some of the areas where more work must be done.

### About India's manufacturing Sector:

- India has the fifth largest manufacturing base in the world
- As per the second quarter report of the Quarterly Employment Survey conducted by the Union Ministry of Labour, the manufacturing sector accounted for nearly 39% of all the employment generated in the selected nine sectors.
- More than 45% of the manufacturing output is obtained from the MSME sector in India. The vast pool of human capital available in India at various skill levels offers a distinct competitive advantage to firms that conduct manufacturing activities within India.
- India's manufacturing sector prominence is seen in sectors such as apparel and accessories, textiles, drugs and pharmaceuticals, petroleum products and motor vehicles.

### Efforts initiated in manufacturing sector:

- **Infra-development projects**
  - National infrastructure pipeline
  - India investment Grid - Statistics reveal that there are 15,454 projects available involving a total project cost of \$1,981 billion as on May 5, 2022.
  - The National Industrial Corridor Development Programme was launched to facilitate the integrated development of industrial smart cities having plug and play infrastructure along with multi-modal connectivity.
  - Also, a number of Production-Linked Incentive (PLI) schemes have been announced since 2020 for various sectors that incentivise manufacturing with a goal to achieve 'Atma Nirbhar Bharat'.
- **Manufacturing in Warehouses**
  - The Central Board of Indirect Taxes and Customs (CBIC) has brought forward a new and improved version of the programme focused on manufacturing and other operations in bonded warehouses.
  - Manufacturing in warehouses results in saving working capital, which is usually scarce in case of small enterprises and helping in better positioning of MSMEs in the international market by shortening the delivery schedule in the global supply chain.
- **Custom Rules**
  - Domestic manufacturing within India is also being encouraged through statutory measures like the Customs (Import of Goods at Concessional Rate of Duty) Rules, which has also been amended from time to time to take into account the dynamic needs of the industry and trade.

### Challenges in the Manufacturing sector:

- **Poor infrastructure**
  - India's weak infrastructure continues to be a fatal flaw for the manufacturing sector.

- India uses only 3% of its GDP for infrastructure construction each year, as compared to China's 20% of its GDP.
- Even today, India's surface transportation systems cannot meet the expectations of modern high-speed logistics which is the backbone of efficient manufacturing.
- **Lack of Certified Factories**
  - Big companies around the world prefer to source goods from factories that are ISO or BSI certified. In China, majority of companies have required certifications, but that is difficult to find in India.
  - Majority of companies in India do not even meet basic inspection standards
- Poor and erratic electricity supply is yet another drawback that puts the country's manufacturers at a distinct disadvantage. India's annual power gap is more than 10% and it has among the lowest per capita power consumption around the world.

#### **What should be done to boost manufacturing in India?**

- **Policy Intervention**
  - Focus should be given on making policies that seek to increase worker skills and ensure that finances actually reach the firms that need it the most.
  - Speaking particularly for manufacturing firms, they require fixed capital investments, and are hurt the most by lack of adequate finance for expansion.
- **Infrastructure investments**
  - Focus on large-scale infrastructure investments will itself create enormous growth opportunities.
  - Research has shown that investment in hard infrastructure also results in reduction of logistics cost of manufacturing.
- **Stable Power Supply**
  - Stable, low cost and uninterrupted power is crucial to promote growth of industries. Power availability has improved in the nation but it must be possible on industrial level to realize the benefits of manufacturing growth.
- High quality vocational training must be provided within the education system.
- It is observed that manufacturing is mainly concentrated in a few states like Gujarat and Maharashtra. States such as Andhra Pradesh, Bihar, Chhatisgarh, MP, Rajasthan also have large land areas that can contribute to the success of Indian manufacturing. The reasons behind less manufacturing activity in these states need to be carefully analyzed and state specific industrialization strategies need to be devised and implemented in mission mode taking help of the Union Government.

## **The Multiple Crises in Indian Universities**

**News:** Education has long been touted to play a key role in reducing socio-economic inequalities. Multiple studies, both in India and abroad, have reaffirmed the belief that higher education leads to better financial outcomes. Keeping this in mind, the Government of India launched several initiatives for the upliftment of Indian universities, such as the Institutes of Eminence scheme, IMPRINT initiative and the NEP 2020.

In spite of recent initiatives, the institutions in India face many crises – a financial crunch at the University level, a deficit in research opportunities for faculty, poor infrastructure and learning outcomes for students.

#### **Why Indian Universities fail to deliver?**

- **Teaching Capacity** - The QS World University Rankings 2022 revealed that although Indian universities have improved their performance on academic reputation metric and research impact, they continue to struggle on the teaching capacity metric. No Indian university ranks among the top 250 for faculty-student ratio.
- The management of Indian education faces challenges of over-centralization, bureaucratic structures and lack of accountability, transparency.
- The spending on higher education, as a percentage of government expenditure, has stagnated at 1.3-1.5% since 2012.

- **Insufficient Research Grants** – Lack of resources and facilities as well as limited number of quality faculty to advise students. Most of the research scholars are without fellowships or not getting their fellowships on time which directly or indirectly affects their research.

#### **Financing constraints faced by Indian Universities:**

- Most universities are running on a deficit – Madras university saw an accumulated deficit of over Rs.100 crore, forcing it to seek a Rs.88 crore grant from the State government.
- Investments in university infrastructure have shrunk. At the central level, student financial aid was cut to ₹2,078 crore in FY 2022-23 from ₹2,482 crore in FY 2021-22; allocations for research and innovation were down by 8%, reaching ₹218 crore.
- The Higher Education Financing Agency (HEFA), which provides funding for all infrastructure loans to institutions, saw its budget reduced from ₹2,000 crore in FY 20-21 to ₹1 crore in FY 21-22. Instead, universities have been forced to take loans, but have few avenues to tap into.

#### **What steps can be taken?**

- There is an urgent need to increase funding, along with established dedicated funding streams for infrastructure grants/loans and financial aid.
- The establishment of the NRF is expected to connect the academia with ministries and industries and fund research that is relevant to local needs. Funding for research needs to rise significantly, with institutions like the NRF supplementing (and not replacing) existing schemes (including those from the Ministry of Science). Funding should also be allocated to enable course-based research experiences for undergraduates. Moreover, NRF shall pose well-defined problems to the researchers, so that they can find solutions in a goal-oriented and time bound manner.
- It is disheartening to find that higher education institutions have failed to protect the sanctity of their examinations. Improving this will require a decentralised approach, with universities allowed to take decisions on academic programmes, promotions, cohort size, etc.
- With the goal of increasing the Gross enrollment ratio (GER) from the current 27% to 50% by 2035, India needs to not only open new Higher Education Institutes (HEIs) and universities but also scale up the existing ones.
- The institutes need to become multi-disciplinary in their scope and offerings and collaborate among themselves.
- Assessing the quality of education through an employability lens will ensure that we are addressing the 'unemployable graduates' problem. Students prioritise employability when selecting universities; with the rapid changes in technology, future jobs are not yet defined. Therefore, programmes need to be designed with continuous feedback from the industry.

The NEP 2020 has sought to foster critical thinking and problem solving, along with social, ethical and emotional capacities and dispositions. Enabling this will require an encouraging ecosystem, with greater funding, autonomy and tolerance of universities. Without this, talented Indian citizens will continue to escape abroad, while policymakers lament India's brain drain.

## **Long Term Plan Needed to Combat Heat Waves**

**News:** India has been in the grip of what seems like an eternity of heat waves. The temperatures over north-west and central India in April 2022 were the highest in 122 years. India is no stranger to heatwaves but what stands out about the heatwaves this year is the remarkably earlier timing, and the large spatial extent, extending from the northwestern to the southeastern parts of the country.

#### **What are Heat Waves and causes behind the same?**

- A heatwave is a period of abnormally high temperatures that occurs during the summer season in the North-Western and South Central parts of India. It is a condition of air temperature which becomes fatal to the human body when exposed.
- The nearest causes for the searing heat are an absence of rain-bearing Western Disturbances or tropical storms that bring rain from the Mediterranean over North-India.

- The combination of global warming and population growth in already-warm cities in India is the primary driver of increased heat exposure.
- The Urban Heat Island (UHI) also elevates temperatures within cities, which will be amplified during the heatwaves.

### **Role played by India in terms of Heat Wave Impact Mitigation Strategy?**

- No National-level heatwave action plan was available before 2015 to fight against such calamities
- At the regional-level, Ahmedabad Municipal Corporation (AMC) prepared the first Heat Action Plan in 2013, followed by the devastating heatwave-related deaths in 2010.
- In 2016, the National Disaster Management Authority (NDMA) issued comprehensive guidelines to prepare national level key strategies for mitigating the impact of heatwaves.

### **Long Term Strategies needed by India:**

- Death from heat waves can be prevented by installing improved early warning systems that communicate heatwave threats, recommend different preventative measures, and constrain disaster impacts. Disseminating public awareness through print, electronic and social media, providing heat-proof shelter facilities during summer, easing access to public drinking water, and huge afforestation in urban and rural areas would help mitigate heatwave fatalities.
- Recognising heat waves as a major disaster is long due. India still has a long way to go in building public awareness, particularly on how individuals and local communities can take care of themselves. Also, there needs to be clear guidelines regarding when to shut schools or about the optimal ranges of temperatures that a household AC should be kept at or how long one should stay outdoors if that's unavoidable.
- The adverse impacts of heat waves indicate that effective disaster adaptation strategies and more robust disaster management policies are required in heatwave zones to lessen the impact of heatwaves.
- Passive cooling technology, a widely-used strategy to create naturally ventilated buildings, can be a vital alternative to address the urban heat island for residential and commercial buildings. The IPCC's AR6 report cites ancient Indian building designs that have used this technology, which could be adapted to modern facilities in the context of global warming.
- A big reason that cities are so much hotter than rural areas is that they are covered by dark roofs, roads and parking lots that absorb and retain heat. One of the long term solutions can be replacing the dark surfaces with lighter and more reflective materials; it will result in a comparatively cooler environment.

Heatwave is India's second most lethal disaster after the flood. Declaring heat waves as a natural disaster would help the state and district administration prepare a heatwave action plan at the regional level. This will help build resilience infrastructure, develop early warning infrastructure, and create public awareness. It is also crucial to prepare a database at the district level involving the age, gender, and occupation of people who have died due to heatwaves.

## **Making Agri-Tourism a Sustainable Business**

**News:** Agri-tourism, once a small niche, is expanding rapidly and getting a big push from the Ministry of Tourism. An enabling environment is required for agri-tourism to thrive and have at least a 15-20% share in the tourism industry.

### **What is Agri-Tourism?**

- Agri-tourism can be defined as a form of commercial enterprise that links agricultural production and/or processing with tourism to attract visitors onto a farm, ranch, or other agricultural business for the purposes of entertaining and/or educating the visitors while generating income.
- It is a non-urban hospitality product, serving an agrarian lifestyle, culture and heritage with an abundance of natural resources. Agri-tourism has gained traction in the tourism industry.

### **Potential:**

- It is niche and emerging market segment of the tourism industry.
- It was globally valued at \$42.46 billion in 2019 and is expected to reach \$62.98 billion by 2027.

- The seeds of agri-tourism in India were first sown by the formation of Agri Tourism Development Corporation (ATDC) located in Baramati, Maharashtra.
- Currently, India's revenue from agri-tourism is growing at an annual growth rate of 20%.

### Why Agri-Tourism matters?

- Rapid climate change and tourism induced pollution level and Greenhouse Gas (GHG) emissions have resulted in rising demand for natural and rural destinations as tourist attractions and that can bring eco-friendly tourism experiences such as agri-tourism into the mainstream business.
- India's agriculture has been under stress due to increased input costs, volatile returns, climatic adversaries, land fragmentation, and so on. Although it is a mainstay of the economy, farmers have shifted to other industries in search of alternative livelihoods and income diversification. Agri-tourism can address the 'hollowing out' effect of rural decline and restore farmers' confidence in agriculture and ecosystem-based services.
- Agri-tourism gives an altogether different perspective to our farmers. It gives them an opportunity to have additional source of income, incentivizes farmers to use the land which would otherwise be left fallow or uncultivated.
- It can be a vehicle for generating additional revenue for local businesses, upgrading/revitalizing community facilities, increasing protection of rural landscapes and natural environments for tourists and residents, help preserve and revitalize local traditions, art and craft.

### Challenges:

- Active farmers may tend to ignore their farming activity if their attention and focus shift towards agri-tourism, if it becomes a more lucrative source of income.
- Insufficient financial support can hinder the tourism potential of the region, which would help the folks to preserve the local culture, traditions, heritage, art forms etc.
- Tourism as a concept is very indigenous in the rural areas. Though attempts have been taken by local youths, but professionalism is lacking.
- Tourists prefer to visit agri-tourism centres with a larger area and multiple fun and recreational activities. This is in contrast with the very purpose of agri-tourism that is to support small and marginal farmers, who are unlikely to have larger agri-tourism centres with several amenities.

### How can Agri-Tourism be promoted?

- Agri-Tourism needs greater policy attention in developing countries where major population is engaged in agricultural activities. While the sector remains plagued with issues such as debt-trap, unpredictable impact of climate change, uncertain cash flow, agri-tourism can be promoted as an income-generating activity for farmers and strengthen economic, cultural and ecological resilience of rural regions.
- It is important to ascertain the issue of small/inadequate land to support agri-tourism.
- Promotion of Agri-Tourism needs conceptual convergence with Rural Tourism, Eco-Tourism, Health Tourism, Adventure Tourism and culinary adventures. Research is one of the key factors for development in any discipline as it helps students and practitioners to get involved in their areas of interest and search for all possible solutions for the benefit of local communities.
- Farmers can themselves achieve success in this field by making efforts to understand customer's demand, charging optimum rents for facilities they provide, small farmers can develop their agri-tourism centres on the basis of a cooperative society and making sincere efforts to publicize tourism centres through newspapers, NGO's, television etc.

## A twofold approach to win the war on misinformation

**News:** Social Media platforms have effectively taken the place of traditional information networks in India. Many times, false information, intentionally or unintentionally, gets transferred through social media that manipulates the beliefs of people towards a particular community, the government or some ongoing issue. Public opinion is the currency of democracy, and, therefore, vested interests cannot be allowed to hijack public opinion through the organized dissemination of information.

## How spread of false information concerns us?

- **Lack of transparency and concentration of social-media by a few individuals**
  - Social media platforms are becoming the primary ground for public discourse over which a handful of people have inordinate control.
  - Lack of transparency by social media platforms is one of the biggest hurdles to curb misinformation. When platforms have disclosed certain information, the data is often not presented in a manner that facilitates easy analysis.
- **Inadequate measures**
  - The social media platforms have failed to develop a coherent framework to stop misinformation.
  - The absence of a uniform baseline approach, enforcement, and accountability vitiated the information ecosystem.
- Social media platforms have adopted design choices that have led to a mainstreaming of misinformation while allowing themselves to be weaponized by powerful vested interests for political and commercial benefit. The consequent free flow of disinformation, hate and targeted intimidation has led to real-world harm and degradation of democracy in India.
- Misinformation spread through social media applications has been linked to minority hate, entrenched social polarisation, vaccine hesitancy, and real-life violence.
- **Digital Media Illiteracy among Children**
  - The NEP 2020 is a missed opportunity to insert media literacy in the curriculum. Although, 'digital literacy' is mentioned once in the document, social media literacy is entirely neglected.
  - This is a serious gap as social media is the primary source of students' literacy.

## What needs to be done?

- **Make laws that facilitates Transparency**
  - A framework which underlines to combat disinformation at scale must be built on the understanding that it is a political problem.
  - Transparency and regulation need to be brought to bring governance of speech within the ambit of the democratic process. It is important to bring a comprehensive transparency law to compel relevant disclosures by platforms to facilitate action by a wider group of stakeholders. Such a law should include safeguards for user privacy since platforms are a repository of the private information of citizens.
- **Creating a regulatory body**
  - It is proposed to constitute a regulator with statutory powers to lay out broad processes for governance of speech, set transparency standards and audit platforms for compliance and advisory powers to develop perspective on key misinformation themes especially those with public policy implications.
  - Such a body should be answerable to parliament and not the executive.
  - Such a model will increase democratic contest by moving contested speech issues into the political sphere and facilitate transparency of powerful technology platforms.
- **Structural Reforms in Platforms**
  - Blanket immunity for platforms as "intermediaries" no longer makes sense since platforms are far more interventionist with user content. Therefore, platform accountability should be linked to their distribution model.
  - In this regime, platforms would either adopt a hands-off approach to content and constrain distribution to organic reach (chronological feed); or exercise editorial choice and take responsibility for amplified content.
  - Also, Platforms must be mandated to default to a chronological feed, allowing users to make an informed choice to opt-in for a curated feed.
- **Digital media literacy among children**
  - A strategy that has not received sufficient attention in India is digital media literacy to the citizens, especially school children, to equip them with skills to steer through the information they receive.
  - Therefore, technological interventions to tackle misinformation should be complemented with human-centric solutions focused on digital media literacy. Social media platforms must take initiatives in this regard and promote digital media literacy.

# The Rise of AI Chips

**News:** The adoption of Artificial Intelligence (AI) chips has risen, with chipmakers designing different types of these chips to power AI applications such as natural language processing (NLP), computer vision, robotics, and network security across a wide variety of sectors, including automotive, IT, healthcare, and retail.

## What are AI Chips?

- AI chips are built with specific architecture and have integrated AI acceleration to support deep learning-based applications.
- Deep learning, more commonly known as active neural network (ANN) or deep neural network (DNN), is a subset of machine learning and comes under the broader umbrella of AI.
- It combines a series of computer commands or algorithms that stimulate activity and brain structure.
- DNNs go through a training phase, learning new capabilities from existing data.
- DNNs can then inference, by applying these capabilities learned during deep learning training to make predictions against previously unseen data.
- Deep learning can make the process of collecting, analyzing, and interpreting enormous amounts of data faster and easier.
- These chips, with their hardware architectures and complementary packaging, memory, storage and interconnect technologies, make it possible to infuse AI into a broad spectrum of applications to help turn data into information and then into knowledge.
- There are different types of AI chips such as application-specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), central processing units (CPUs) and GPUs, designed for diverse AI applications.

## How are AI chips different from traditional chips?

- When traditional chips, containing processor cores and memory, perform computational tasks, they continuously move commands and data between the two hardware components.
- These chips, however, are not ideal for AI applications as they would not be able to handle higher computational necessities of AI workloads which have huge volumes of data.
- On the other hand, AI chips contain processor cores as well as several AI-optimized cores that are designed to work in harmony when performing computational tasks.
- The AI cores are optimized for the demands of heterogeneous enterprise-class AI workloads with low-latency inferencing, due to close integration with the other processor cores, which are designed to handle non-AI applications.
- AI chips, essentially, reimagine traditional chips' architecture, enabling smart devices to perform sophisticated deep learning tasks such as object detection and segmentation in real-time, with minimal power consumption.

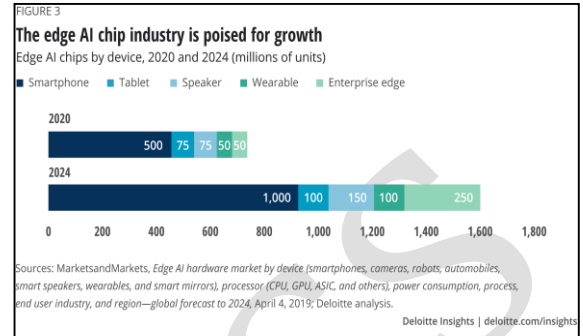
## Applications:

- Semiconductor firms have developed various specialized AI chips for a multitude of smart machines and devices, including ones that are said to deliver the performance of a data centre-class computer to edge devices.
- Some of these chips support in-vehicle computers to run state-of-the-art AI applications more efficiently.
- AI chips are also powering applications of computational imaging in wearable electronics, drones, and robots.
- Additionally, the use of AI chips for NLP applications has increased due to the rise in demand for chatbots and online channels such as Messenger, Slack, and others. They use NLP to analyse user messages and conversational logic.
- Then there are chipmakers who have built AI processors with on-chip hardware acceleration, designed to help customers achieve business insights at scale across banking, finance, trading, insurance applications and customer interactions.

- As AI becomes pervasive across different workloads, having a dedicated inference accelerator that includes support for major deep learning frameworks would allow companies to harness the full potential of their data.

### What are the prospects of AI chip industry?

- The rise in need for smart homes and cities, and the surge in investments in AI start-ups are expected to drive the growth of the Global AI chip market, as per a report by Allied Market Research.
- The Worldwide AI chip industry accounted for \$8.02 billion in 2020 and is expected to reach \$194.9 billion by 2030, growing at a compound annual growth rate (CAGR) of 37.4% from 2021 to 2030.



### Conclusion

- The UN Secretary-General's Roadmap on Digital Cooperation is a good starting point: it lays out the need for multi-stakeholder efforts on global cooperation so AI is used in a manner that is 'trustworthy, human rights-based, safe and sustainable, and promotes peace'.
- And UNESCO has developed a global, comprehensive standard-setting draft Recommendation on the Ethics of Artificial Intelligence to Member States for deliberation and adoption.
- Agreeing on common guiding principles is an important first step, but it is not the most challenging part.
- It is where principles meet reality that the ethical issues and conundrums arise in practice, and for which we must be prepared for deep, difficult, multi-stakeholder ethical reflection, analyses and resolve. Only then will AI provide humanity its full promise.

## Justice, A click Away

**News:** The Covid-19 restrictions provided a major thrust to the digitisation of Indian courts. The judiciary, led by the Supreme Court and the High Courts, adopted e-filing for urgent matters and conducted frequent hearings over video conferencing. Digitization, for the Indian judiciary, presents a golden opportunity to reduce the pendency of a plethora of cases and preserve the decade-old documents.

### Beginning of use of technology in Judiciary:

- In India, e-governance in the field of administration of justice began in the late 1990s, but it accelerated after the enactment of the Information and Technology Act, 2000.
- As the 21st century began, the focus was on digitising the court's records and establishing e- courts across the country.
- In the year of 2006, e-courts were launched as a part of the National e-Governance Plan (NeGP).

### Steps taken by courts in India for Digitisation of Judiciary:

- As the Chief Justice of Allahabad High Court (HC), Justice D Y Chandrachud conceptualised and initiated the project to digitise approximately one crore case files in one year.
- The hearing of matrimonial cases through video-conferencing was approved by the Supreme Court in the matter of Krishna Veni Nagam v Harish Nagam (2017). However, the direction was short-lived.
- In 2018, the Supreme Court allowed the live-streaming of cases of constitutional and national importance on the basis of the judgement in Swapnil Tripathi vs Supreme Court Of India, 2018. Live streaming of court proceedings is a step towards ensuring transparency and openness.
- The Gujarat HC in July 2021 became the first country in the country to livestream its proceedings. It was later emulated by the HC of Karnataka, Odisha and MP.
- The latest Vision Document for Phase III of the e-Courts Project was introduced during the Covid-19 pandemic to address the judiciary's digital deprivation. It envisages an infrastructure for the judicial system that is 'natively digital' and reflects the effect that the pandemic has had on India's judicial timeline and thinking.



**Need for Digitization:**

- Not only a large space is required to store so many files, it is also quite difficult to manually preserve the decades-old documents. It has been observed that cases are adjourned simply because affidavits filed several years ago were not restored with the record or were not traceable.
- Another purpose is to ensure that these files are traceable electronically as and when required. The consequences of missing court records are grave. In old cases many times it was found that missing of criminal records has led to acquittal of the accused.
- In State of Uttar Pradesh v. Abhay Raj Singh, it was held by the Supreme Court that if court records go missing and re-construction is not possible, the courts are bound to set aside the conviction.
- The time consumed in summoning records from the lower courts to the appellate courts is one of the major factors that cause delays in cases.

**Challenges:**

- Internet connectivity issues and the need for a well-equipped space where lawyers can conduct their cases are some of the major problems requiring attention. Lawyers in semi-urban and rural districts find online hearings challenging, mostly due to connectivity issues and an unfamiliarity with this way of working
- Many judges, staff and lawyers are not accustomed to the use of digital technology and its benefits.
- With increasing digitisation, especially of court records, privacy concerns are likely to be at the forefront of judicial and public deliberations in the coming years.
- On the top of technology, cyber-security will be a huge concern too. The government has initiated remedial steps to address this problem and formulated the Cyber Security Strategy. However, the practical and actual implementation of the same remains a challenge.

**Way Forward:**

- Virtual hearings cannot be a substitute for physical court hearings in all cases. However, in appropriate cases and certain categories of cases as identified by the court administration in consultation with the members of the bar, virtual hearing should be mandatory.
- There is also a need to educate judges, court staff and lawyers to make them aware about use of digital technology and also give them adequate training for the same.

# General Studies – 1

## **Indian Heritage and Culture**

1. Indian culture will cover the salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

## **History**

2. Modern Indian history from about the middle of the eighteenth century until the present significant events, Personalities, Issues.
3. The Freedom Struggle — Its various stages and Important contributors / contributions from different parts of the country.
4. Post-independence consolidation and reorganization within the country.
5. History of the world will include events from 18th century such as Industrial revolution, World wars, Redrawing of national boundaries, Colonization, decolonization, Political philosophies like communism, capitalism, socialism etc.— their forms and effect on the society

## **Society**

6. Salient features of Indian Society, Diversity of India.
7. Role of women and women's organization, Population and associated issues, Poverty and developmental issues, Urbanization, their problems and their remedies.
8. Effects of globalization on Indian society.
9. Social empowerment, Communalism, regionalism & secularism.

## **Geography**

10. Salient features of world's physical geography.
11. Distribution of key natural resources across the world (including South Asia and the Indian sub-continent) Factors responsible for the location of primary, secondary, and tertiary sector industries in various parts of the world (including India).
12. Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., Geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes

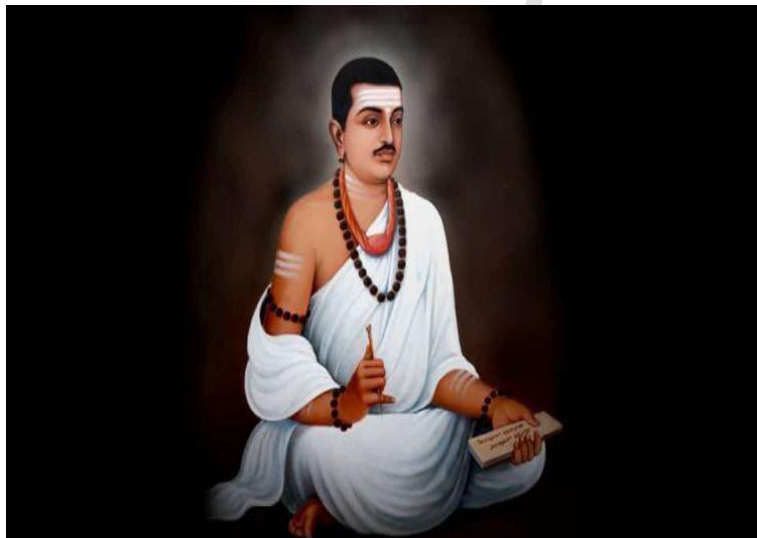
# History & Culture

## Basava Jayanti

**News:** Basava Jayanti marks the birth anniversary of Lord Basavanna, the 12th-century poet-philosopher, and the founding saint of the Lingayat faith. This year it was celebrated on 3rd May 2021.

### About:

- Basavanna was a philosopher, statesman, Kannada poet and a social reformer during the reign of the Kalachuri-dynasty king Bijjala I in Karnataka.
- Basava spread social awareness through his poetry, popularly known as Vachanaas.
- Basavanna rejected gender or social discrimination, superstitions and rituals.
- He introduced new public institutions such as the Anubhava Mantapa (or, the “hall of spiritual experience”), which welcomed men and women from all socio-economic backgrounds to discuss spiritual and mundane questions of life, in open.
- As a leader, he developed and inspired a new devotional movement named Virashaivas, or ‘ardent, heroic worshippers of Shiva’. This movement shared its roots in the ongoing Tamil Bhakti movement, particularly the Shaiva Nayanars traditions, over the 7th- to 11th-century.
- Basava championed devotional worship that rejected temple worship and rituals led by Brahmins, and replaced it with personalized direct worship of Shiva through practices such as individually worn icons and symbols like a small linga.



## Rakhigarhi

**News:** DNA samples collected from two human skeletons unearthed at a necropolis of a Harappan-era city site in Rakhigarhi, Haryana have been sent for scientific examination.

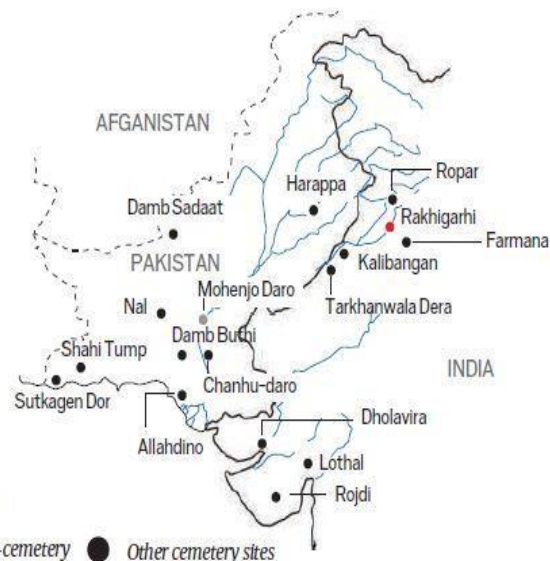
- DNA analysis might tell about the ancestry and food habits of people who lived in the Rakhigarhi region thousands of years ago.

### About:

- It is a 5,000-year-old site that showcases continuity from the Harappan age to the present times. The village also has havelis that are a couple of hundred years old.
- The site is located in the Sarasvati river plain, some 27 km from the seasonal Ghaggar river.
- Seven mounds are located here. The site has yielded various stages of Harappan culture and is by far one of the largest Harappan sites in India.

## TALES FROM HARAPPA'S DEAD

Harappan sites in India and Pakistan where skeletons have been found. The discovery of the Rakhigarhi necropolis is unique in a number of ways



## Major Findings:

- Findings confirm both early and mature Harappan phases and include 4,600-year-old human skeletons, fortification and bricks.
- Digging so far reveals a well-planned city with 1.92 m wide roads, a bit wider than in Kalibangan.
- Pits surrounded by walls have been found, which are thought to be for sacrificial or some religious ceremonies.
- There are brick-lined drains to handle sewage from the houses.
- Terracotta statues, weights, bronze artefacts, comb, copper fish hooks, needles and terracotta seals have also been found.
- Fire altars structures were revealed in Rakhigarhi.

## Martand Sun Temple

**News:** The Jammu and Kashmir Lieutenant Governor participated in a religious ceremony held in the ruins of the 8th century Martand Sun temple, a protected monument under the Archaeological Survey of India. This temple has been recognised as a "Site of national importance".

### About:

- The Martand Sun Temple also known as Pandou Laidan is a Hindu temple dedicated to Surya (the chief solar deity in Hinduism) and built during the 8th century CE. Martand is another Sanskrit synonym for Surya.
- It was built by the third ruler of the Karkota Dynasty, Lalitaditya Muktapida.
- It is now in ruins, as it was destroyed by the orders of Muslim ruler Sikandar Shah Miri.
- From the ruins and related archaeological findings, it can be said it was an excellent specimen of Kashmiri architecture, which had blended the Gandhara, Gupta and Chinese forms of architecture.



### Who was Lalitaditya Muktapida?

- Lalitaditya was born in the year of 699 AD as the third son of Durlabhak-Pratapaditya of Kashmir. He was from the Nagvanshi Karkota Kayastha Dynasty of Kashmir.
- Karkota Kayastha families were mainly serving in the army of the kings of Kashmir since decades. They were known for their remarkable courage in the battlefield.
- The Kings of Kashmir had given them the title Sakhasena for their immense contribution.
- Lalitaditya's birth name was Muktapida and his older brothers were Chandrapida and Tarapida. Muktapida took over the Kingdom of Kashmir in the year 724 AD.
- It was the same time, when the western invasion had begun in India and the Arabs had already occupied the province of Swat, Multan, Peshawar and the Kingdom of Sindh.
- The Arab king Muhammad Bin Qasim, the Arab ruler was already threatening to occupy Kashmir and central India.
- He fought the Daradas, Kabhojas and Bhuttas of Ladakh who were under Tibetan rule.
- Lalitaditya himself led the army into the war defeating all Kings and established control over the regions of Ladakh.
- The alliance between Lalitaditya and Yashovarman defeated the Arabs from entering Kashmir.
- He later invaded Turkestan via Kabul. Lalitaditya acquired most of the places in the west and south of India starting from Rashtrakutas in Maharashtra, Pallavas and Kalinga in the southern part.
- He also extended his kingdom to central China after defeating the Chinese. After which he was compared with Alexander the Great.

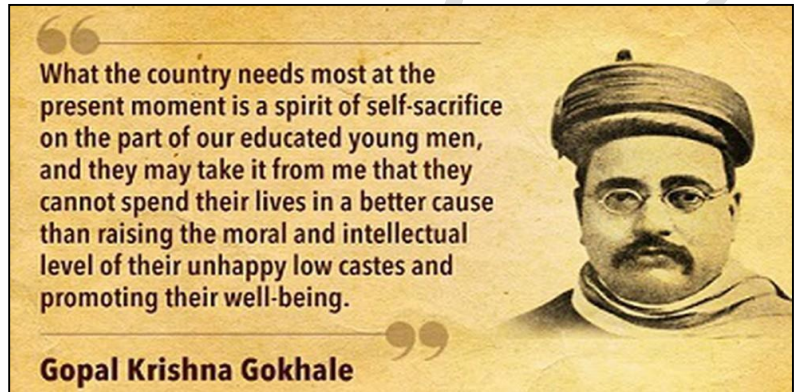
- The Kashmir Kingdom gained enormous wealth and Lalitaditya utilized the wealth to build massive infrastructure in Kashmir, construction of temples were taken up and Kashmir saw extensive development under Lalitaditya.
- Lalitaditya was a very liberal King, though he was a strong follower of Hindu tradition, he respected all religions. He is said to be a very compassionate ruler who responded to people's voices.
- In the year 760 AD, the Lalitaditya era came to an end by his sudden death.

## Gopal Krishna Gokhale

**News:** The Prime Minister of India paid tribute to Gopal Krishna Gokhale on his Jayanti.

### About:

- Gopal Krishna Gokhale was a great social reformer and educationist who provided exemplary leadership to India's freedom movement.
- Between 1899 and 1902, he was a member of the Bombay Legislative Council followed by work at the Imperial Legislative Council from 1902 till his death (1915). At the Imperial legislature, Gokhale played a key role in framing the Morley-Minto reforms of 1909.
- He was associated with the Moderate Group of Indian National Congress (joined in 1889). He became president of INC in 1905 in Banaras session.
- As a liberal nationalist, he is regarded by Mahatma Gandhi as his political guru.
- Gandhi wrote a book in Gujarati dedicated to the leader titled 'Dharmatma Gokhale'.



### Other contribution:

- He established the Servants of India Society in 1905 for the expansion of Indian education.
- He was also associated with the Sarvajanic Sabha journal started by Govind Ranade.
- In 1908, Gokhale founded the Ranade Institute of Economics.
- He started English weekly newspaper, The Hitavada (The people's paper).

## Excavations of Iron in Tamil Nadu

**News:** Carbon dating of excavated finds in Tamil Nadu pushes evidence of iron being used in India back to 4,200 years ago, the Tamil Nadu government announced this week on the basis of an archaeological report.

- Before this, the earliest evidence of iron use was from 1900-2000 BCE for the country, and from 1500 BCE for Tamil Nadu.
- The latest evidence dates the findings from Tamil Nadu to 2172 BCE which is much older.
- The results of dating, used accelerator mass spectroscopy.

### About:

- The excavations are from Mayiladumparai near Krishnagiri in Tamil Nadu.
- Mayiladumparai is an important site with cultural material dating back between the Microlithic (30,000 BCE) and Early Historic (600 BCE) ages.

### Significance:

- Invention of iron technology led to the production of agricultural tools and weapons, leading to production required for a civilisation ahead of economic and cultural progress. There is no known record of iron being used in the Indus Valley, where copper was first utilized by Indians (1500 BCE).

- Deforestation occurred only after humans began using iron tools to clear dense forests and bring land into agriculture, because copper tools would have been difficult to use to clear dense forests and bring land into agriculture.
- With the latest evidence tracing our Iron Age to 2000 BCE from 1500 BC, it can be assumed that the cultural seeds were laid in 2000 BCE. Around 600 BCE, iron technology led to massive production triggered by socio-economic changes - the Tamil Brahmi script.
- The Tamil Brahmi scripts were once believed to have originated around 300 BCE, until a landmark finding in 2019 pushed the date back to 600 BCE.
- This dating narrowed the gap between the Indus Valley civilisation and Tamilagam/South India's Sangam Age.

## Raja Ram Mohan Roy

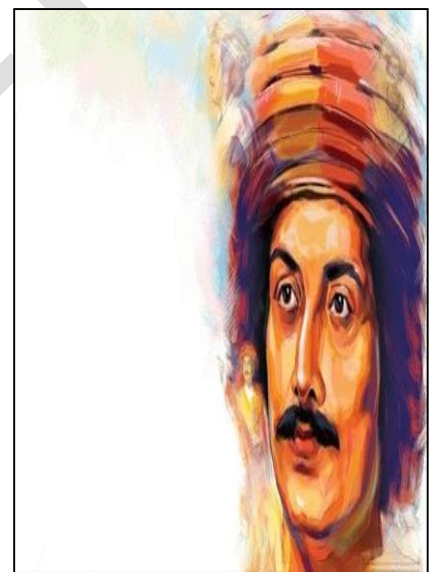
**News:** The 250<sup>th</sup> Birth Anniversary of Raja Ram Mohan Roy was celebrated on May 22<sup>nd</sup> this year.

### About:

- Popularly remembered as the Father of Indian Renaissance
- He represented Akbar II in England where he pleaded for his pension and allowances. Akbar II was the one who awarded him the title 'Raja'.

### Organisations he is associated with:

- Started Atmiya Sabha in 1814 in order to crusade against idol worship, meaningless rituals and superstitious beliefs. He spreaded the monotheistic ideals.
- Founded the Hindu College at Calcutta in 1817.
- The Calcutta Unitarian Committee
- He created the 'Brahma Sabha' in 1828
- Setup the Anglo-Hindu school which taught mechanics and Voltaire's philosophy
- Started the Vedanta College where Indian learning, as well as the Western social and physical sciences, were taught.
- In 1830, he assisted Alexander Duff to set up the General Assembly's institution, which later became the Scottish Church College.



### Social Contributions:

- He stood against the practice of Sati. The Abolition of Sati Act, 1829, was a result of R.R Mohan Roy's efforts.
- He pleaded for the right of inheritance and property for women.
- He fought against polygamy and child marriage which were prevalent back then.
- He supported women education as he believed that only education would fetch women equal social status with men.

### Literary works:

- Brahmanical Magazine (1821)
- Sambad Kaumudi
- Mirat-ul-Akbar, a Persian Journal
- Tuhfat-ul-Muwahiddin
- Vedanta Gantha
- Kenopanishads
- Ishopanishad
- Kathopanishad

## Anangpal II

**News:** The National Monuments Authority (NMA) (set up for the protection and preservation of monuments under the Ministry of Culture) has planned to erect a statue of Anangpal Tomar II somewhere in central Delhi and develop it into a tourist spot.

### About:

- Belonged to the Tomar dynasty that ruled parts of present-day Delhi and Haryana between the 8th and 12th centuries.
- He was succeeded by his grandson Prithviraj Chauhan, who was defeated by the Ghurid forces in the Battle of Tarain (present-day Haryana) after which the Delhi Sultanate was established in 1192.
- The Tomar dynasty shifted its capital in the 8th century, to Dhillikapuri (Delhi) during the reign of Anangpal II.
- The Vishnu Garud Dhvaj (iron pillar) in the Qutub complex was also brought by King Anangpal Tomar II.
- Many believe he was the founder king of Delhi.

### Tomar Dynasty:

- It is one of early medieval ruling houses of Northern India.
- The history of the family spans the period between the reign of Anangpal, who founded the city of Delhi in the 11th century CE, and the incorporation of Delhi within the Chauhan (Chahamana) kingdom in 1164.
- Although Delhi subsequently became decisively a part of the Chauhan kingdom, numismatic and comparatively late literary evidence indicates that Tomara kings such as Anangapala and Madanapala continued to rule as feudatories, presumably until the final conquest of Delhi by the Muslims in 1192–93.

## PM Modi's gifts for his QUAD colleagues

**News:** At the recent Quad Summit held at Tokyo, PM Modi carried with him gifts for leaders of the US, Australia and Japan showcasing India's rich cultural heritage and art forms.

### About Various Gifts and their cultural significance:

#### Sanjhi Art Form

- Sanjhi panel gifted to US President Joe Biden is based on the theme of Thakurani Ghat (It is one of the most famous ghats on the banks of the holy river of Yamuna in Gokul).
- This art form originated out of the cult of Krishna.
- It involves creating stencils based on incidents from the life of the deity and then hand-cutting these on thin sheets of paper using scissors.
- Sanjhi was popularised in the 15th and 16th centuries by the Vaishnava temples and was practiced by Brahmin priests.



#### Gond Art Painting

- The painting was given to Australian PM Anthony Albanese.
- The gift depicts a popular motif in Gond art — the Tree of Life, with intricate patterns and lines that are a trademark of Gond art.
- Gond art is practiced by the Gond community in Madhya Pradesh.
- It is often traced to Jangarh Shyam, who in the 1970s and 80s began drawing the largely oral



myths and legends of the tribe onto the walls of homes in the village of Patangarh

### Rogan Painting

- PM Modi gifted the Japanese PM a hand-carved deep brown wooden box with a gold and white Rogan painting on a green cloth as its central motif.
- Rogan is a form of cloth painting that is considered to be more than four centuries old and is primarily practised in Kutch district of Gujarat.
- The word 'rogan' comes from Persian, meaning varnish or oil.
- The craft uses paint made from boiled oil and vegetable dyes.
- Usually, only half the fabric is painted and it is folded to create a mirror image.
- Originally only men used to practice the art form. Now several women in Gujarat also pursue it.





# Society

## Bhil Pradesh

**News:** The demands for a 'Bhil Pradesh' have of late begun to be raised again.

**About:**

- It is a demand for a separate state for tribal people in western India.
- The demand is to carve out a separate state from 39 districts spread over four states: 16 in Gujarat, 10 in Rajasthan, seven in Madhya Pradesh, and six in Maharashtra.
- Bhil social reformer and spiritual leader Govind Guru first raised the demand for a separate state for tribals back in 1913 after the Mangarh massacre.

**Bhils – Who are they?**

- Bhils are an Adivasi ethnic group in West India. Bhils are listed as tribal people of the states of Gujarat, Madhya Pradesh, Chattisgarh, Maharashtra and Rajasthan.
- They are one of the largest tribal group in India who speak the Bhil Language.

**Need for Bhil Pradesh?**

- After the division of states, tribals in the region were scattered.
- As a result, their collective voices were suppressed. Subsequently, most schemes related to their development have not benefitted them.

**The Mangarh Massacre:**

- The massacre, which took place six years before Jallianwala Bagh and is sometimes referred to as the 'Adivasi Jallianwala', saw almost 1000 Bhil tribals being killed by British forces on November 17, 1913 in the hills of Mangarh on the borders of Rajasthan and Gujarat.

**To read more about Mangarh Massacre you may click on the following link:**

<https://www.myindiamyglory.com/2019/07/18/mangarh-massacre-sacrifice-of-1500-bhils-against-british-in-1913/>

## Marital Rape

**News:** Recently, the Delhi High Court delivered a split verdict in a batch of petitions challenging the exception provided to marital rape in the Indian Penal Code (IPC).

**About:**

- Marital rape is the act of sexual intercourse with one's spouse without her consent.
- It is no different manifestation of domestic violence and sexual abuse.
- It is often a chronic form of violence for the victim which takes place within abusive relations.

**Outcome of Split Verdict: Preserving the institution of marriage**

The Centre's concern that criminalising marital rape may destabilise the institution of marriage is a "legitimate" one, said the HC.

- In a marriage, conjugal expectation is a two-way street, where "consent is given as a part of spousal intimacy although the will to engage may be absent".
- If every such case is treated as marital rape, then the only way partners in a marriage may survive would be by drawing up a detailed written agreement.
- It would lead to creating a detailed evidentiary record of every act of intimacy and/or by inviting a third party to act as a witness.
- The Bench highlighted the signs of injury on a partner need not necessarily mean there had been non-consensual sex as "in the age of sexual liberation", injuries could be a sign of "passion"
- Forced sexual intercourse between a husband and wife cannot be treated as rape. At worst, it can be treated as sexual abuse found in Section 3 of the Domestic Violence Act.

### **Remedy:**

- Section 3 of the Protection of Women from Domestic Violence Act, 2005 provides a definition for domestic violence, which includes physical, sexual, verbal and emotional abuse.

### **Why Marital Rape must be a crime?**

- A research says that marital rape can be more emotionally and physically damaging than rape by a stranger
- Rape by a spouse, partner or ex-partner is more often associated with physical violence
- It kind of becomes an obligation on the women to continue living with their spouse in case of Marital rape
- Marital rape is considered as the violation of FR guaranteed under Article 14 of the Indian constitution which guarantees the equal protection of laws to all persons.
- By depriving married women of an effective penal remedy against forced sexual intercourse, it violates their right to privacy and bodily integrity, aspects of the right to life and personal liberty under Article 21.

### **How is Marital Rape treated around the world?**

- According to Amnesty International data, 77 out of 185 (42%) countries criminalise marital rape through legislation. It includes nations like Australia, Canada and South Africa.
- Ghana, India, Indonesia, Jordan, Lesotho, Nigeria, Oman, Singapore, Sri Lanka and Tanzania expressly allow marital rape of a woman or a girl by her husband.

### **Way Forward:**

- Indian law now affords husbands and wives separate and independent legal identities, and much jurisprudence in the modern era is explicitly concerned with the protection of women.
- Therefore, it is high time that the legislature should take cognisance of this legal infirmity and bring marital rape within the purview of rape laws by eliminating Section 375 (Exception 2) of IPC.

## **ASHA Workers**

**News:** ASHA (Accredited Social Health Activist) workers have received the Global Health Leaders Award-2022 in the backdrop of the on-going 75<sup>th</sup> World Health Assembly.

### **About:**

- They are volunteers from within the community who are trained to provide information and aid people in accessing benefits of various healthcare schemes of the government.
- They act as a bridge connecting marginalised communities with facilities such as primary health centres, sub-centres and district hospitals.
- The role of these community health volunteers under the National Rural Health Mission (NRHM) was first established in 2005.
- There are around 10.4 lakh ASHA workers across the country. The largest workforces of ASHA workers are in states with high populations such as UP, Bihar and Madhya Pradesh. Goa is the only state with no such workers.

### **What is their role?**

- Go door-to-door in their designated areas creating awareness about basic nutrition, hygiene practices, and the health services available.
- To ensure women undergo ante-natal checkup, maintain nutrition during pregnancy, deliver at a healthcare facility, and provide post-birth training on breast feeding and complementary nutrition of children. Counsel women about contraceptives and sexually transmitted infections.
- Ensure that children get immunised. Provide medicines daily to TB patients under directly observed treatment of the national programme.

### **What are they paid?**

- Since they are considered “volunteers”, governments are not obligated to pay them a salary. And, most states don't.
- Their income depends on incentives under various schemes that are provided when they, for example, ensure an institutional delivery or when they get a child immunised. All this adds up to only between Rs 6,000 to Rs 8,000 a month.

# Geography

## The crisis in the Jute Industry

**News:** Member of Parliament (MP) from Barrackpore constituency in West Bengal met the Union Textile about issues concerning jute farmers, workers and the overall jute industry.

### Issues:

- High rate of procurement by Mills. Mills are procuring raw jute at higher prices than what they are selling them after processing. Mills do not acquire their raw material directly from the farmers because farmers are far off from the mills locations and procurement process is cumbersome.
- The situation particularly has become worrisome recently with the occurrence of Cyclone Amphan in May 2020 and the subsequent rains in major jute producing States. These events led to lower acreage, which in turn led to lower production and yield compared to previous years. Also, this led to production of a lower quality of jute fibre in 2020-21 as water-logging in large fields resulted in farmers harvesting the crop prematurely.
- Instances of hoarding impact the final price. For example, the government has a fixed Minimum Support Price (MSP) for raw jute procurement from farmers, which is Rs. 4,750 per quintal for the 2022-23 season. However, this reaches the mill at Rs. 7200 per quintal.

The jute sector provides direct employment to 3.70 lakh workers in the country and supports the livelihood of around 40 lakh farm families, closure of the mills is a direct blow to workers and indirectly, to the farmers whose production is used in the mills. West Bengal, Bihar and Assam account for almost 99% of India's total production.

### Facts to know about Jute from Prelims perspective:

- Temperature – Between 25 – 35 Degree Celsius
- Rainfall – 150-200 cm
- Soil – Well drained alluvial
- It is also known as Golden Fibre
- India is the largest producer of jute followed by Bangladesh and China. However, in terms of acreage and trade, Bangladesh takes the lead accounting for three-fourth of the global jute exports in comparison to India's 7%.

### Government initiatives:

- Jute Packaging Materials Act, 1987 – The act provides for the compulsory use of jute packaging material in the supply and distribution of certain commodities in the interests of production of raw jute and jute packaging material.
- Jute Geo-Textiles (JGT) - The Cabinet Committee on Economic Affairs (CCEA) has approved a Technical Textiles Mission which includes Jute Geo-Textiles. JGT is one of the most important diversified jute products. It can be applied in many fields like civil engineering, soil erosion control, road pavement construction and protection of river banks.
- Jute Smart – E-government initiative which was launched in December 2016 to promote transparency in the jute sector. It provides an integrated platform for procurement of sacking by government agencies.

## Twin Cyclones

**News:** A pair of tropical cyclones, Asani & Karim (one in the northern hemisphere and one in the southern hemisphere) one on each side of the equator, have been formed.

- These are cyclones originating in the same longitude and now drifting apart.

### About:

- The interplay of the wind and the monsoon system combined with the Earth system produces twin cyclones.
- They are basically caused by equatorial Rossby waves.

- Rossby waves are named for famous meteorologist Carl-Gustaf Rossby who was the first to explain that these waves arose due to the rotation of the Earth.
- They are huge waves in the ocean with wavelengths of around 4,000–5,000 kilometres.
- This system has a vortex in the northern hemisphere and another in the southern hemisphere, and each of these is a mirror image of the other.
- The vortex in the north spins counterclockwise and has a positive spin, while the one in the southern hemisphere spins in the clockwise direction and therefore has a negative spin.
- Both have a positive value of the vorticity which is a measure of the rotation.

### How are twin cyclones formed?

- When the vorticity is positive in both Northern and Southern hemispheres, as is the case with Rossby waves, the air in the boundary layer, which is moist, is lifted slightly. That is enough to set off a feedback process.
- When the air is lifted slightly, the water vapour condenses to make clouds. As it condenses, it lets out the latent heat of evaporation.
- The atmosphere warms, this parcel of air rises, and a positive feedback is set off by this process.
- The warmer parcel of air can rise further because it is lighter than the surrounding air, and it can form deeper clouds.
- Meanwhile, moisture comes in from both sides. This leads to the formation of a cyclone if certain conditions are present.

### Madden-Julian Oscillation

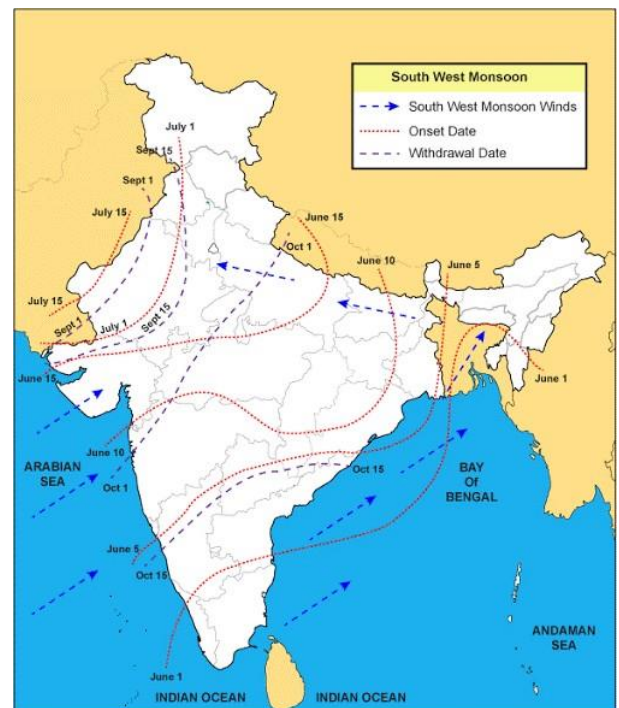
- Karim and Asani are “twin” cyclones not only because they formed at the same time in the same general area but also because they were formed primarily from the same “parent” circulation: the Madden-Julian Oscillation or MJO.
- MJO is large cluster of clouds and convection, around 5000-10,000 km in size
- It is composed of a Rossby wave and a Kelvin wave, which is a type of wave structure that we see in the ocean.
- On the eastern side of the MJO is the Kelvin wave, while on the western, trailing edge of the MJO, is the Rossby wave, once again with two vortices on either side of the equator.

## Onset of Monsoon

**News:** The southwest monsoon is likely to set in over Kerala on May 27, well ahead of its normal date of June 1. If the forecast turns out to be accurate, this will be the earliest onset of the monsoon over Kerala since at least 2009.

### When is the onset of south-west monsoon announced by IMD?

- The IMD declares the onset of the monsoon if at least 60% of 14 designated meteorological stations in Kerala and Lakshadweep record at least 2.5 mm of rain for two consecutive days at any time after May 10.
- The depth of westerlies should be upto 600 hectopascal (1 hPa is equal to 1 millibar of pressure) in the area bound by the equator to 10°N latitude, and from longitude 55°E to 80°E. The zonal wind speed over the area bound by 5-10°N latitude and 70-80°E longitude should be of the order of 15-20 knots (28-37 kph) at 925 hPa.
- Outgoing Longwave Radiation (OLR) value (a measure of the energy emitted to space by the Earth’s surface, oceans, and atmosphere) should be below 200 watt per



sq m ( $\text{wm}^2$ ) in the box confined by 5-10°N latitude and 70-75°E latitude.

#### **Factors influencing the onset on Southwest Monsoon:**

- The low-pressure area or depression in the Bay of Bengal during the last days of May or the beginning of June.
- There are such systems in the Arabian Sea as well around the same time which results in onset over the mainland.
- 'Cyclonic Vortex' is another factor which appears in the Southeast Arabian Sea, off Kerala and Lakshadweep region. They also shift along the west coast to push the monsoon current.
- The formation of 'trough' off the west coast due to temperature differential between land and sea. This situation could be for a mild start and weak progress.
- Lastly the cross-equatorial flow, wherein the trade winds from the Southern Hemisphere crossover to the Northern Hemisphere can bring a strong monsoon surge towards the Indian mainland.

## **Urban Heat Islands**

**News:** Recently, several parts of India are experiencing severe heat waves. Urban areas and cities are the places which have higher temperatures than rural places. This phenomenon is referred to as "Urban Heat Island".

#### **About:**

- It is a phenomenon where certain pockets within a city are experiencing higher heat load than its surrounding area.
- It is temporary in nature.
- The rise of heat is basically due to buildings and houses of cities made up of concrete where the heat is trapped and not able to dissipate easily.

#### **Causes of Urban Heat Islands:**

- Increase in construction activities is the primary reason. From building simple homes to huge infrastructures, carbon absorbing materials like asphalt and concrete is needed for expansion of cities. They trap huge amounts of heat which increases the mean surface temperature of urban areas.
- Rooftops of many buildings have dark surfaces, thereby decreasing albedo and increasing absorption of heat.
- Buildings with dark surfaces require more cooling from air conditioning, which requires more energy from power plants, which causes more pollution. Air conditioners, also exchange heat with atmospheric air, causing further local heating.
- Increasing use of vehicles and unimpeded use of fossil fuels also add warmth to urban areas.
- Lack of green cover in the cities impedes evapotranspiration, shade and removal of carbon-dioxide, all the processes that help to cool the surrounding air.

#### **Steps to minimize impact of Urban Heat Islands:**

- Increase area under Green Cover
- Passive cooling technology, a widely-used strategy to create naturally ventilated buildings, can be a vital alternative to address the urban heat island for residential and commercial buildings. The IPCC report cites ancient Indian building designs that have used this technology, which could be adapted to modern facilities in the context of global warming.
- Use of appropriate construction material, roof and terraces to be painted in white or light colours to reflect heat and reduce the absorption.
- Promoting Terrace plantation and kitchen gardening can also be a solution.

#### **Observation of NASA's Ecostress:**

- An image acquired by NASA's Ecosystem Spaceborne Thermal Radiometer Experiment (Ecostress), revealed a massive red spot over Delhi and smaller red patches around neighboring cities Sonipat, Panipat, Jind and Bhiwani.
- It observed higher incidences of heat island in urban parts of Delhi is occurring. Temperatures were significantly higher in urban part of Delhi than in surrounding areas.

- Ecostress is a radiometer-equipped device that was sent to the International Space Station in 2018 by NASA.
- Ecostress is primarily responsible for assessing in the temperature of plants, as well as knowing their water requirements and the influence of the climate on them.

## Assam Floods

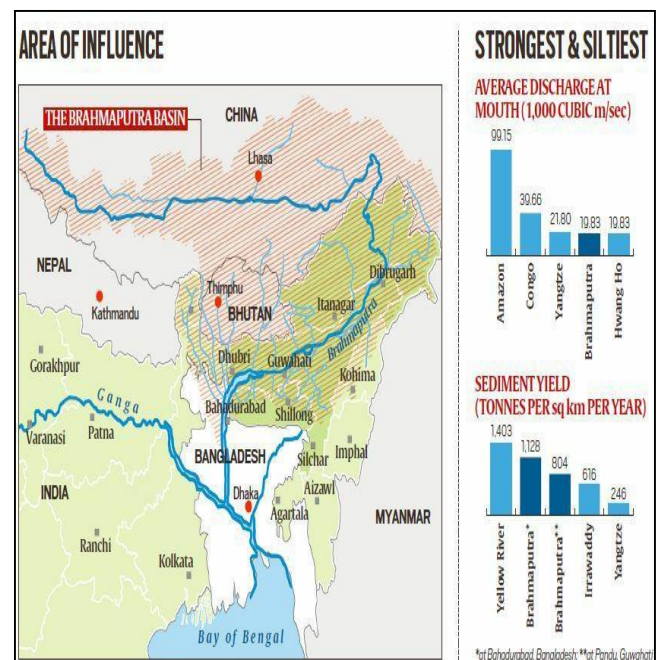
**News:** Torrential Rainfall and landslides in the past few days have eroded sections of roads and railway tracks in Assam. The weather department has predicted that 'extremely heavy rains' will continue for the coming days as the states stay on 'red alert'.

### Why are floods common in Assam?

- **High percentage of Flood prone region**
  - 31.05 lakh hectares of the total 78.523 lakh hectares of the area of the state is prone to frequent floods. Both man-made and natural factors are reason behind this high flood prone area.
- **River Brahmaputra**
  - The river is braided and unstable in its entire reach in Assam except for a few places. The main reason behind the instability of river are high sedimentation and steep slopes.
- **Earthquakes/Landslides**
  - Assam lies in the seismic zone Assam and some other parts of the northeastern region are prone to frequent earthquakes, which causes landslides. The landslides and earthquakes send in a lot of debris in the rivers, causing the river bed to rise.
- **Dams**
  - One of the man-made reason for key cause of floods in Assam region is releasing of water from dams situated uphill. Unregulated release of water, floods the Assam plains.
- **Encroachment**
  - Population density of Brahmaputra river valley was 9-29 people per sq.km in 1940-41. However, this shot up to 200 people per sq.km now according to Brahmaputra board.
  - Unplanned expansion of the urban areas has led to severe encroachments in the wetlands, low lying areas, hills and shrinkage of forest cover.
- **Bank Erosion**
  - Assam has also faced bank erosion around the Brahmaputra and Barak rivers as well as their tributaries.
  - It is estimated that annually nearly 8000 hectares land is lost to erosion. Bank erosion has also affected the width of the Brahmaputra river, which has increased up to 15 km.

### How has government tried to intervene? Why have they failed?

- Floods are recurrent feature during monsoons in Assam. In fact, the ecologists have argued that the annual phenomenon play an important role in maintaining the balance of local ecosystem.
- The floodwaters deposit nutrients that make the grassland more fertile. This means more food for Rhinos and other herbivores. Floods also help root out invasive species like water hyacinth, which threatens the native flora that rhinos eat.
- But it's also a fact that for more than 60 years, the centre and state governments have not found ways to contain the toll taken by the raging waters.
- The state has primarily relied on embankments to control floods. This flood control measure was introduced in Assam in the early 1950s when the hydrology of most Indian rivers, including the Brahmaputra, was poorly understood.



- But, several of the state's embankments were reportedly breached by the floods this year.
- Experts blame the piece-meal approach behind flooding. Lot of agencies work on it but there is no co-ordination among them.

### What is the way forward?

- Involving local communities in the processes of flood governance, who often possess rich local knowledge about adaptation to and governance of flooding.
- Rejuvenating of wetlands before monsoon can help in mitigating flood in parts of state.
- Studying the river and the impact of climate change is a must to understand why the state gets flooded every year.
- Water flow information shared by China on the Brahmaputra with India, for which India pays a certain amount, should also be shared with the public, as this will help in understanding the river better and therefore help people better prepare for floods.
- More accurate and decentralised forecasts of rain can help in improving preparedness. Weather reports should be made available on district level and should be accessible to public.

## West Bank Settlements

**News:** Recently, the Israel's Supreme Court has rejected a petition against the eviction of more than 1,000 Palestinian inhabitants of a rural part of the occupied West Bank in an area which Israel has designated for military exercises.

### About the Judgement:

- The judgment has paved the way for the demolition of eight small villages in a rocky, arid area near Hebron known to Palestinians as Masafer Yatta and to Israelis as the South Hebron Hills.
- Masafer Yatta residents and Israeli rights groups say that many of the Palestinian families have been permanently residing in the 3,000 hectares area since before Israel captured the West Bank, in the 1967 Six-Day War.



### What is West Bank?

- West Bank is a landlocked territory in West Asia. It also contains a significant section of the western Dead Sea.
- It was captured by Jordan after the Arab-Israeli War (1948) but Israel snatched it back during the Six-Day War of 1967 and has occupied it ever since.
- The West Bank is sandwiched between Israel and Jordan.
- One of its major cities is Ramallah, the de facto administrative capital of Palestine.
- At present, there are around 130 formal Israeli settlements along with 26 lakh Palestinians at West Bank.
- Masafer Yatta is in the 60% of the territory where the Palestinian Authority is prohibited from operating.
- The Palestinians want the West Bank to form the main part of their future state.

### About Six-Day War:

- The Six Day war was a conflict fought in 1967 between Israel and Arab states of Egypt, Syria and Jordan.
- Israel seized the Sinai Peninsula and the Gaza Strip from Egypt, the West Bank and East Jerusalem from Jordan, and the Golan Heights from Syria. Since 1967, the lands Israel seized in the Six-Day War have been at the center of efforts to end the Arab-Israeli conflict.
- Even though Israel returned the Sinai Peninsula to Egypt in 1982 and withdrew from Gaza in 2005, the status of the Golan Heights and the West Bank continues to be a stumbling block in Arab-Israeli peace negotiations.

# General Studies – 2

## **Polity & Constitution**

1. Indian Constitution—historical underpinnings, evolution, features, amendments, significant provisions and basic structure.
2. Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein.
3. Separation of powers between various organs dispute redressal mechanisms and institutions
4. Comparison of the Indian constitutional scheme with that of other countries.
5. Parliament and State legislatures—structure, functioning, conduct of business, powers & privileges and issues arising out of these.
6. Structure, organization and functioning of the Executive and the Judiciary—Ministries and Departments of the Government; pressure groups and formal/informal associations and their role in the Polity.
7. Salient features of the Representation of People’s Act.
8. Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.
9. Statutory, regulatory and various quasi-judicial bodies.

## **Social Justice**

10. Government policies and interventions for development in various sectors and issues arising out of their design and implementation.
11. Development processes and the development industry —the role of NGOs, SHGs, various groups and associations, donors, charities, institutional and other stakeholders.
12. Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.
13. Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.
14. Issues relating to poverty and hunger.

## **Governance**

15. Important aspects of governance, transparency and accountability, e-governance, applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures.
16. Role of civil services in a democracy.

## **International Relations**

17. India and its neighborhood- relations.
18. Bilateral, regional and global groupings and agreements involving India and/or affecting India’s interests.
19. Effect of policies and politics of developed and developing countries on India’s interests, Indian diaspora.
20. Important International institutions, agencies and fora- their structure, mandate



# Polity & Governance

## Criminal Justice System

**News:** The Supreme Court gave two months to high courts and states to implement a set of guidelines meant to streamline inadequacies and deficiencies in criminal trials.

- These guidelines are referred to as Draft Rules of Criminal Practice, 2020.
- The Draft Rules recommends reforms in investigation and trial, including proposals to employ separate teams of lawyers to help the police during the probe and for the trial; details to be covered while drafting spot panchnamas and even corrections in body sketches.

### Criminal Justice System in India:

- It refers to the agencies of government charged with enforcing law, adjudicating crime, and correcting criminal conduct.

### The main objectives are:

- To prevent the occurrence of crime.
- To punish the transgressors and the criminals.
- To rehabilitate the transgressors and the criminals.
- To compensate the victims as far as possible.
- To maintain law and order in society.
- To deter offenders from committing any criminal act in the future

### The necessity of reforms:

- The purpose of the criminal justice system was to protect the rights of the innocents and punish the guilty, but nowadays the system has become a tool of harassment of common people.
- The criminal justice system in India is replica of British colonial jurisprudence. The relevance of 19<sup>th</sup> century laws is questionable in the 21<sup>st</sup> century.
- India has one of the world's largest numbers of under-trial prisoners. According to National Crime Records Bureau (NCRB)-Prison Statistics India, 67.2% of our total prison population comprises of under trial prisoners.
- According to Economic Survey 2018-19, there were about 3.5 crore cases pending in the judicial system, especially in district and subordinate courts, which leads to actualization of the maxim justice delayed is justice denied.
- Police play a vital role in administration of justice. Corruption, huge workload and accountability of police is a major hurdle in speedy and transparent delivery of justice.

### What can be the way forward?

- Institutionalizing All-India Judicial Service can be a step in the right direction.
- Need to launch victim and witness protection schemes.
- Mechanisms such as Alternate Dispute Resolution (ADR), Lok Adalats, Gram Nyayalayas can be effectively utilized.

## Mandate Document for National Curriculum Framework

**News:** Recently, the Ministry of Education has released the 'mandate document' for a National Curriculum Framework under the new National Education Policy (NEP), 2020.

- The mandate document is envisaged to bring about a paradigm shift with focus on holistic development of children, emphasis on skilling, vital role of teachers, learning in mother tongue, cultural rootedness.
- It is also a step towards decolonization of the Indian education system.

### About National Curriculum Framework:

- The development of the NCF is being guided by the National Steering Committee (NSC), chaired by Dr K Kasturirangan, supported by the Mandate Group, along with the National Council for Education Research and Training (NCERT).

- The NCF will include:
  - The National Curriculum Framework for School Education (NCFSE),
  - The National Curriculum Framework for Early Childhood Care & Education (NCFECCE),
  - The National Curriculum Framework for Teacher Education (NCFTE),
  - The National Curriculum Framework for Adult Education (NCFAE).

### Mandate Document – What is it?

- It sets the mechanisms for the development of a coherent and comprehensive NCF, fully leveraging the widespread consultations already under way.
- The process designed ensures the seamless integration imagined - vertically (across Stages) and horizontally in the NEP 2020 – to ensure holistic, integrated, and multi-disciplinary education.
- It enables the critical linkage between the curriculum of schools with the curriculum of Teacher Education as an integral part of the transformative reforms envisioned by the NEP 2020.
- It informs the creation of opportunities for life-long learning for all citizens in the country.
- Anchored and informed by sound theory and cutting-edge research yet using simple language with real-life illustrations from classrooms and schools in a variety of contexts.
- The states and the Centre ‘must act urgently’ to address the ‘huge learning loss’ among students due to the interruptions in regular teaching and learning caused by the pandemic over the last two years.

### What is Decolonization of Indian Education system?

- India has been a colony of the British Empire for two centuries. These eventful two centuries of Indian history did see the influence of not only the political and economic might of Britain but its influence on every milieu of Indian life.
- India’s indigenous education system was gradually displaced, and the colonial model of education pervaded under the patronage from the colonial-state. The language, pedagogy, evaluation and knowledge of the colonizer became natural obligation for the population of the colony.
- Although India got independence in 1947, still Indian education system is heavily dominated by western world. Hence, there is a need to decolonize Indian Education System immediately.

## Office of Profit

**News:** The Election Commission (EC) has sent a notice to Jharkhand CM over an office-of-profit charge against him for allotment of a mining lease in his name last year.

- Under Section 9A of the Representation of the People Act, 1951, the CM could face disqualification for entering into a government contract.
- The Constitution of India does not define the Office of Profit. It has only mentioned it under Article 102 (1) and Article 191 (1).

### What is Office of Profit?

- If an MLA or an MP holds a government office and receives benefits from it, then that office is termed as an ‘office of profit’.
- A person will be disqualified if he holds an office of profit under the central or state government, other than an office declared not to disqualify its holder by a law passed by Parliament or state legislature.

### What is the underlying principle for including ‘office of profit’ as criteria for disqualification?

- Makers of the Constitution wanted that legislators should not feel obligated to the Executive in any way, which could influence them while discharging legislative functions.
- In other words, an MP or MLA should be free to carry out her duties without any kind of governmental pressure. The intent is that there should be no conflict

### What the law says

**Article 102 (1)(a)** says a person shall be disqualified from being a member of either House of Parliament if he holds any office of profit, among other grounds

**Article 103** says if a question arises whether a member has incurred such disqualification, it will be referred to the President's decision. The President shall obtain the Election Commission's opinion and act accordingly

**Article 191(1)** contains a similar provision for MLAs and MLCs in the States. Legislators in Delhi are covered by corresponding provisions in the Government of National Capital Territory Act, 1991



between the duties and interests of an elected member.

- The office of profit law simply seeks to enforce a basic feature of the Constitution- the principle of separation of power between the legislature and the executive.

#### **Reasons for controversies:**

- At present, the Parliament (Prevention of Disqualification) Act, 1959, bars an MP, MLA or an MLC from holding any office of profit under the central or state government unless it is exempted. However, it does not clearly define what constitutes an office of profit.
- The term 'office of profit' has not been defined in the Constitution or in the Representation of the People Act, 1951.
- It is for the courts to explain the significance and meaning of this concept. Over the years, courts have decided this issue in the context of specific factual situations.
- But, articles 102 (1) and 191(1) which give effect to the concept of office of profit prescribe restrictions at the central and state level on lawmakers accepting government positions.

#### **Role played by Judiciary in defining the 'office of profit':**

The Supreme court in Pradyut Bordoloi vs Swapan Roy (2001) outlined the four broad principles for determining whether an office attracts the constitutional disqualification.

- Whether the government exercises control over appointment, removal and performance of the functions of the office.
- Whether the office has any remuneration attached to it
- Whether the body in which the office is held has government powers (releasing money, allotment of land, granting licenses etc.).
- Whether the office enables the holder to influence by way of patronage.

## **World Press Freedom Index 2022**

**News:** On the World Press Freedom Day (WPDF) (3rd May), the 20th edition of the World Press Freedom Index was published by Reporters Without Borders (RSF).

#### **About:**

- It has been published every year since 2002 by Reporters Sans Frontieres (RSF) or Reporters Without Borders.
- Based in Paris, RSF is an independent NGO with consultative status with the United Nations, UNESCO, the Council of Europe and the International Organization of the Francophonie (OIF).
- The Index ranks countries and regions according to the level of freedom available to journalists. However, it is not an indicator on the quality of journalism.
- The Index's rankings are based on a score ranging from 0 to 100 that is assigned to each country or territory, with 100 being the best possible score (the highest possible level of press freedom) and 0 the worst.
- Each country or territory's score is evaluated using five contextual indicators: political context, legal framework, economic context, sociocultural context and safety.

#### **Highlights of Performance of the World:**

- The report reveals a two-fold increase in 'polarisation' amplified by information chaos, that is, media polarisation fuelling divisions within countries, as well as polarisation between countries at the international level.
- The top 5 performers include Norway (1<sup>st</sup>), Denmark (2<sup>nd</sup>), Sweden (3<sup>rd</sup>), Estonia (4<sup>th</sup>) and Finland (5<sup>th</sup>).
- While North Korea remained at the bottom of the list, Russia was placed at 155<sup>th</sup> position.

#### **Performance of India:**

- India has fallen eight places from 142<sup>nd</sup> to 150<sup>th</sup> in the 2022 among the 180 countries.
- India's position has been consistently falling in the index since 2016 when it was ranked 133

#### **Reasons behind India's poor performance:**

- According to the index the media in India, among nations reputed to be more democratic, faces pressure from 'increasingly authoritarian and/or nationalist governments'.

- Although the policy framework is protective in theory, it resorts to using defamation, sedition, contempt of court, and endangering national security against journalists critical of the government, branding them as 'anti-national.'
- According to the report, India is also one of the world's most dangerous countries for media-persons. Journalists are exposed to all kinds of physical violence including police violence, ambushes by political activists, and deadly reprisals by criminal groups or corrupt local officials.
- The situation in Kashmir remains 'worrisome' and reporters are often harassed by police and paramilitaries.

## Sedition Law

**News:** The Government has sought more time to submit its written response to petitions challenging the constitutional validity of Section 124A of the Indian Penal Code dealing with the offense of sedition.

### About:

- Sedition laws were enacted in 17th century England when lawmakers believed that only good opinions of the government should survive, as bad opinions were detrimental to the government and monarchy.
- The law was originally drafted in 1837 by Thomas Macaulay, the British historian-politician, but was inexplicably omitted when the Indian Penal Code (IPC) was enacted in 1860.
- Section 124A was inserted in 1870 by an amendment introduced by Sir James Stephen when it felt the need for a specific section to deal with the offence.
- Today the Sedition is a crime under Section 124A of the Indian Penal Code (IPC).

### Section 124A of IPC:

- It defines sedition as an offence committed when 'any person by words, either spoken or written, or by signs, or by visible representation, or otherwise, brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards the government established by law in India'.
- Disaffection includes disloyalty and all feelings of enmity. However, comments without exciting or attempting to excite hatred, contempt or disaffection, will not constitute an offence under this section.

### What about punishment for offence of Sedition?

- It is a non-bailable offence. Punishment under Section 124A ranges from imprisonment up to three years to a life term, to which a fine may be added.
- A person charged under this law is barred from a government job.
- They have to live without their passport and must produce themselves in the court at all times as and when required.

### Need for Sedition Law:

- The constitution of India prescribes reasonable restrictions under Article 19(2) that can always be imposed on this right (Freedom of Speech and Expression) in order to ensure its responsible exercise and to ensure that it is equally available to all citizens.
- Sedition law helps the government in combating anti-national, secessionist and terrorist elements.
- It helps in protecting the elected government from attempts to overthrow the government with violence and illegal means. The continued existence of the government established by law is an essential condition of the stability of the State.

### Issues surrounding Sedition Law:

- **Reminder of Colonial Era**
  - Colonial administrators used sedition to lock up people who criticised the British policies.
  - Stalwarts of the freedom movement such as Lokmanya Tilak, Mahatma Gandhi, Jawaharlal Nehru, Bhagat Singh, etc., were convicted for their "seditious" speeches, writings and activities under British rule. Thus, rampant use of the sedition law recalls the colonial era.
- **Opinion of Constituent Assembly**
  - The Constituent Assembly did not agree to include sedition in the Constitution. The members felt it would curtail freedom of speech and expression.

- They argued that the sedition law can be turned into a weapon to suppress people's legitimate and constitutionally guaranteed right to protest.
- **Against earlier Supreme court judgements**
  - Supreme Court in Kedar Nath Singh vs State of Bihar case 1962, limited application of sedition to 'acts involving intention or tendency to create disorder, or disturbance of law and order, or incitement to violence'.
  - Thus, invoking sedition charges against academicians, lawyers, socio-political activists and students is in disregard of the Supreme Court's order.

In July 2021, a petition was filed in the SC, that sought a relook into the Sedition Law, the court ruled that 'a statute criminalizing expression based on unconstitutionally vague definitions of 'disaffection towards Government' etc. is an unreasonable restriction on the fundamental right to free expression guaranteed under Article 19 (1)(a) and causes constitutionally impermissible 'Chilling Effect' on speech'.

#### **Way Forward:**

- While Section 124A of the IPC has its utility in combating anti-national, secessionist and terrorist elements. However, dissent and criticism of the government are necessary ingredients of robust public debate in a democracy as vibrant as India's. They must not form part of sedition.
- What can be done is that definition of sedition should be narrowed down, to include only the issues pertaining to the territorial integrity of India as well as sovereignty of the nation.

## **Sealed Cover Jurisprudence**

**News:** The Supreme Court, in the Media One ban case, has reiterated its intention to examine the legality of governments filing incriminating material in sealed covers without sharing the information with the accused/other party.

The issue of 'sealed cover jurisprudence' came up in the previous hearing on March 15, when the Centre wanted to pass on to the court its internal files regarding the ban in a sealed cover.

#### **About:**

- It is a practice used by the Supreme Court and sometimes lower courts, of asking for or accepting information from government agencies in sealed envelopes that can only be accessed by judges.
- While a specific law does not define the doctrine of sealed cover, the Supreme Court derives its power to use it from Rule 7 of order XIII of the Supreme Court Rules and Section 123 of the Indian Evidence Act of 1872.

#### **What is Rule 7 of order XIII of the Supreme Court Rules?**

- It is stated under the said rule that if the Chief Justice or court directs certain information to be kept under sealed cover or considers it of confidential nature, no party would be allowed access to the contents of such information.

#### **Are there any exceptions?**

- If the Chief Justice himself orders that the opposite party be allowed to access it.
- It also mentions that information can be kept confidential if its publication is not considered to be in the interest of the public.
- Section 123 of the Indian Evidence Act of 1872
  - Under this act, official unpublished documents relating to state affairs are protected and a public officer cannot be compelled to disclose such documents.
  - Other instances where information may be sought in secrecy or confidence are when its publication impedes an ongoing investigation, such as details which are part of a police case diary.

#### **What is the need to have sealed covers?**

- When the matter pertained to the Official Secrets Act.
- At times it is needed to maintain public confidence in the Government agency.
- Delicate international negotiations or those that relate to sensitive aspects of security.
- Details about survivors of sexual assaults or child abuse which may affect their future life and bring unnecessary shame affecting the Right to Live with Dignity.

- Disclosure sometimes affects the ongoing investigation.

#### Issues:

- It is not favourable to the principles of transparency and accountability of the Indian justice system, as it stands against the idea of an open court, where decisions can be subjected to public scrutiny.
- To enlarge the scope for arbitrariness in court decisions, as judges are supposed to lay down reasoning for their decisions, but this cannot be done when they are based upon information submitted confidentially.
- It is also argued that not providing access to such documents to the accused parties obstructs their passage to a fair trial and adjudication.
- Sealed covers are dependent on individual judges looking to substantiate a point in a particular case rather than common practice. This makes the practice ad-hoc and arbitrary.

In the 2019 judgement in the case of P. Gopalakrishnan vs The State of Kerala, the Supreme Court had said that disclosure of documents to the accused is constitutionally mandated, even if the investigation is ongoing and documents may lead to a breakthrough in the investigation.

#### Way Forward:

- The process of judicial review is significant since it holds the executive accountable.
- The executive must cogently answer its actions – especially when fundamental rights such as free speech are curtailed. India's Constitution does not give a free hand to the executive to pass arbitrary orders violating such rights.

## Jammu and Kashmir Delimitation

**News:** Recently, a commission set up by the Centre Government submitted its final report for the delimitation of Assembly and parliamentary constituencies in Jammu and Kashmir.

#### Why was the commission setup?

- Delimitation became necessary when the Jammu and Kashmir Reorganization Act, 2019 increased the number of seats in the Assembly.
- The erstwhile J&K state had 111 seats - 46 in Kashmir, 37 in Jammu, and 4 in Ladakh -plus 24 seats reserved for Pakistan-occupied Kashmir (PoK).
- In the erstwhile state, delimitation of parliamentary constituencies was governed by the Constitution of India and that of Assembly seats was carried out by the then state government under the Jammu and Kashmir Representation of the People Act, 1957.
- After abrogation of J&K's special status in 2019, the delimitation of both Assembly and parliamentary seats is governed by the Constitution.

#### What has changed?

- **Legislative assembly**
  - The Commission has increased seven Assembly seats — six in Jammu (now 43 seats) and one in Kashmir (now 47).
- **Lok Sabha**
  - There are five Parliamentary Constituencies in the region. The Delimitation Commission has seen the Jammu & Kashmir region as one single Union Territory.
  - The Commission has redrawn the boundaries of Anantnag and Jammu seats.
  - Jammu's Pir Panjal region, comprising Poonch and Rajouri districts and formerly part of Jammu parliamentary seat, has now been added to Anantnag seat in Kashmir.
  - Also, a Shia-dominated region of Srinagar parliamentary constituency has been transferred to Baramulla constituency.
- **Kashmiri Pandits**
  - The Commission has recommended provision of at least two members from the community of Kashmiri Migrants (Kashmiri Hindus) in the Legislative Assembly.
  - It has also recommended that Centre should consider giving representation in the J&K Legislative Assembly to the displaced persons from Pakistan-occupied Kashmir, who migrated to Jammu after Partition.
- **Scheduled Tribes**

- Total nine seats are reserved for Scheduled Tribes for the first time.

### **Controversies surrounding the exercise?**

- Constituency boundaries are being redrawn only in J&K when delimitation for the rest of the country has been frozen until 2026.
- The last delimitation exercise in J&K was carried out in 1995.
- In 2002, the then J&K government amended the J&K Representation of the People Act to freeze the delimitation exercise until 2026, as in the rest of the country.
- This was challenged in the J&K High Court and then the Supreme Court, both of which upheld the freeze.
- While delimitation as a rule is carried out on the basis of Census population, the Commission said it would take certain other factors into consideration for J&K, including size, remoteness and closeness to the border.

## **Assam Cattle Preservation (Amendment) Act, 2021**

**News:** Recently, a cow protection law (Assam Cattle Preservation (Amendment) Act, 2021) that Assam enforced less than a year ago has led to an acute beef crisis in Meghalaya.

- The hill State's main cattle market has also been closed due to non-availability of the animal for consumption.
- Various pressure groups in Assam groups recently held a rally against the Assam Cattle Preservation Act, 2021, stating that the law was an assault on the farm economy in the name of religion.
- The law is aimed at regulating slaughter, consumption and transportation of cattle.

### **Features of the Law:**

- The Act prohibits the slaughter of cows.
- It permits the slaughter of other cattle (bulls, bullocks and buffaloes) if the cattle is over 14 years of age or has become permanently incapacitated due to injury or deformity.
- It also restricts intra-state and inter-state transport of cattle, and sale of beef except at permitted locations.
- The relevant authority may inspect and seize cattle and vehicles used for offences under the Act
- Upon conviction, the seized cattle and vehicles will be forfeited to the state government.

### **What is the need for law?**

- Rise of illegal cattle smuggling along the India-Bangladesh border despite deployment of adequate security forces.
- The Directive Principles of State Policy (Article 48) under the Constitution provides that the state shall endeavor to organize agriculture and animal husbandry on modern and scientific lines, take steps to improve breeds and prohibit the slaughter of cows, calves, and other milch and draught cattle.

### **Controversial provisions:**

- The law completely prohibits Cow slaughter irrespective of any provisions.
- It prohibits the sale of Beef and beef products within a radius of 5 km from any temple. This seems like a complete restriction on Beef for residents residing within the 5 km radius.
- It specifies who is empowered to inspect, search and detain. The power has been provided to Veterinary Officer, Police Officer (Sub Inspector or above), and any person authorized by the State Government. This also might lead to political or communal misuse.
- The punishments and Fines provided are very extreme. These kinds of punishments are given to a very serious offender in the Indian Penal Code, 1860.

### **Observations made by Supreme Court:**

- Over time, the extent of the prohibition under these state laws has been guided by Supreme Court judgments. Earlier state laws such as those in Madhya Pradesh (1949), Bihar (1955), and Uttar Pradesh (1955) completely prohibited the slaughter of cattle.

- In 1958, while examining these three laws, the Supreme Court held that complete prohibition on slaughter of cattle infringed upon the fundamental right of butchers to practice their trade or profession.
- It held that while the complete prohibition on slaughter of cows was constitutionally valid, the ban on slaughter of bulls, bullocks, and buffaloes can only be up to a certain age, or be based on their usefulness (for milk, draught, or reproduction).

## Centre vs Delhi row heads to Constitution Bench

**News:** The 3 – Judge Supreme Court bench has referred to a Constitution Bench the battle between the Centre and Arvind Kejriwal-led Delhi government for control over bureaucrats in the Capital.

- The tussle between the Union and Delhi governments is over the limited question concerning ‘services’ or bureaucracy.

### Arguments of Delhi Government:

- The National Capital Territory government had compared its predicament without power over the ‘services’ like that of a king without a kingdom. For example, the government had to get the approval of the Lieutenant Governor to appoint a Health Secretary. This makes administration difficult and undemocratic.
- The government argues that without the power to control the transfers and postings of the officers, the Principle of ‘Collective Responsibility’ will not be upheld.

### Centre’s perspective:

- The Centre had argued that Delhi, the nation’s capital and a sprawling metropolis, should be under its control.
- It says, Delhi could not be left to the ‘small mercies and smaller resources’ of a State legislature.

### What did the Supreme Court say in 2018?

- The Constitution Bench had unanimously held that the Lieutenant Governor of Delhi was bound by the ‘aid and advice’ of the government and both had to work harmoniously with each other.
- There was no room for anarchy or absolutism in a democracy.
- The 2018 judgment had not specifically dealt with the issue of ‘services’.

### Unresolved issues:

- Though the court has settled that LG is bound to act on the aid and advice except in respect of ‘Land’, ‘Public Order’ and the ‘Police’. However, Public Order is a very wide connotation, which subsequently leads to overlapping executive powers.
- No clarity on Article 239AA - The court did not very clearly delineate the issues in respect of which the LG can refer a decision taken by the Council of Ministers to the President in the event of a difference of opinion between the LG and the State government.
- In the event of referring any matter to the President, the Court enunciated that LG must adhere to the constitutional principles of collaborative federalism, constitutional balance and the concept of constitutional governance. However, these terms are very wide and open-ended. They are subject to different interpretations.

### What did the February 2019 judgement say?

The supreme court gave a split opinion on question over ‘services’ in the Capital.

- Justice Bhushan had held that the Delhi government had no power over ‘services’.
- Justice Sikri: Took the middle path; he concluded that files on the transfers and postings of officers in the rank of secretary, head of department and joint secretary could be directly submitted to the Lieutenant Governor.
- As far as DANICS (Delhi Andamans Nicobar Islands Civil Service) cadre was concerned, the files could be processed through the Council of Ministers led by the Chief Minister to the Lieutenant Governor.
- Again, in case of a difference of opinion, the Lieutenant Governor prevailed.



## Latest demands by Delhi Government:

- The Delhi government has also separately sought the quashing of amendments to the 'Government of National Capital Territory of Delhi (GNCTD) Act' and 13 Rules of the 'Transaction of Business of the Government of National Capital Territory of Delhi Rules, 1993'.
- It has contended that the amendments violate the doctrine of basic structure of the Constitution and that the Centre, through these changes, has given more power to the Lieutenant Governor than the elected government of the people of Delhi.

### IT'S ELECTED GOVT THAT'S ANSWERABLE TO PEOPLE!

**Vindication For AAP**

- 1 SC says LG is bound by 'aid and advice' of the council of ministers, doesn't have 'independent decision-making powers'
- 2 "Ministers' decisions must be communicated to LG but this does not mean LG's concurrence is required"
- 3 "LG must remember that it is the elected government that is answerable to the people"
- 4 LG can't be obstructionist. "The proviso (that) forms the bone of contention... envisages a situation where LG has a 'difference of opinion'... 'on any matter'. The words 'any matter' ... cannot be inferred to mean 'every matter'"

**But There Are Some Important Caveats**

- 1 Centre and the lieutenant governor retain exclusive power over land, police, law and order
- 2 No full statehood. "It is clear as noon day that by no stretch of imagination can NCT of Delhi be accorded the status of a state under our present constitutional scheme," says CJI, reading the order
- 3 Under Article 239AA(4), LG can refer matters to President under "exceptional circumstances"

If Modi govt had not withdrawn the powers of elected govt through illegal orders, precious three years would have been saved. People of Delhi are grateful to the judiciary – CM Arvind Kejriwal

...It has always been so. We ran a government for 15 years and whatever the cabinet decided, LG always agreed

— Sheila Dikshit, former CM

## Pardoning Power of the President

**News:** Recently, a claim made by the Centre that the President had "exclusive powers" to decide whether to pardon Rajiv Gandhi assassination convict drew criticism from the Supreme Court before it reserved the case for judgment.

### About:

- Under Article 72 of the Constitution, the President shall have the power to grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offence where the sentence is a sentence of death.
- The President cannot exercise his power of pardon independent of the government.
- In several cases, the Supreme Court has ruled that the President has to act on the advice of the Council of Ministers while deciding mercy pleas. These include Maru Ram vs Union of India in 1980, and Dhananjay Chatterjee vs State of West Bengal in 1994.
- Although the President is bound by the Cabinet's advice, Article 74 (1) empowers him to return it for reconsideration once. If the Council of Ministers decides against any change, the President has no option but to accept it.
- Under Article 161, the Governor in India too has pardoning powers.

### Difference between Pardoning power of President and Governor?

The scope of Pardoning power of President is wider than that of Governor in 2 ways:

- The power of the President to grant pardon extends in cases where the punishment or sentence is by a Court Martial but Article 161 does not provide any such power to the Governor.
- The President can grant pardon in all cases where the sentence given is the sentence of death but the pardoning power of the Governor does not extend to death sentence cases.

## The Goa Civil Code

**News:** Goa chief minister Pramod Sawant recently said that the Goa civil code can be a model that other states can emulate. This statement comes amid the ongoing discussions for having a Uniform Civil Code for India.

### What is Goa Civil Code?

- In 1867, Portugal enacted a Portuguese civil code and in 1869 it was extended to Portugal's overseas provinces (that included Goa). It is considered a Uniform Civil Code.
- While when it comes to marriage and adoption, there is not complete uniformity, generally the Goa Civil Code is far more gender-just than other laws in the country.
- The law also doesn't recognise bigamy or polygamy, including for Muslims but grants an exception to a Hindu man to marry once again if his wife doesn't conceive a child by the age of 21 or a male child by the age of 30.

- It provides for compulsory registration of marriages before a civil authority, ensuring that the wife is an equal inheritor and is entitled to half of the 'common assets' including those inherited by her husband in the case of a divorce.
- The parents must compulsorily share at least half of the property with their children including daughters.

#### **About UCC:**

- UCC essentially refers to a common set of laws governing personal matters such as marriage, divorce, inheritance and succession for all citizens of the country.
- Article 44 of the Constitution, which is one of the Directive Principles of State Policy, also advocates a uniform civil code.
- However, governments since Independence have allowed respective religion-based civil codes to respect the diversity of India.

## **Gatishakti Sanchar Portal**

**News:** Recently, the Ministry of Communications has launched the "GatiShakti Sanchar" portal for Centralised Right of Way (RoW) approvals.

#### **About:**

- The portal has been developed keeping in view the vision areas of the National Broadband Mission at the core, which are providing broadband infrastructure as a core utility to every citizen, Governance and services on demand, and in particular, digital empowerment of the citizens of the country.

#### **Importance:**

- The timely disposal of RoW applications of various Service and Infrastructure providers shall enable speedy infrastructure creation which would be an enabler for the timely rollout of the 5G Network also.
- Improved quality of telecom services which will lead to fast laying of more Optical Fiber Cable, increased tower density which will enhance connectivity and improve the quality of various telecom services.
- This portal is expected to give a fillip to the nation's 'AatmaNirbhar' movement, contributing actively to transforming the country into a digitally empowered society and knowledge economy.
- This will ensure uninterrupted digital access, digital delivery of services, and digital inclusion of all, based on technology that is sustainable, affordable and transformative.

#### **PM Gati Shakti Scheme:**

- Also known as National Master Plan for multi-modal connectivity, it was launched with an aim of coordinated planning and execution of infrastructure projects to bring down logistics costs.
- To ensure integrated planning and implementation of infrastructure projects in the next four years, with a focus on expediting works on the ground, saving costs, and creating jobs.
- The Gati Shakti scheme will subsume the Rs 110 lakh crore National Infrastructure Pipeline that was launched in 2019.
- Besides cutting logistics costs, the scheme is also aimed at increasing cargo handling capacity and reducing the turnaround time at ports to boost trade.
- It also aims to have 11 industrial corridors and two new defence corridors - one in Tamil Nadu and the other in Uttar Pradesh.
- Extending 4G connectivity to all villages is another aim. Adding 17,000 kms to the gas pipeline network is being planned.
- It will help in fulfilling the ambitious targets set by the government for 2024-25, including expanding the length of the national highway network to 2 lakh kms, creation of more than 200 new airports, heliports, and water aerodromes.

## **The Places of Worship Act**

**News:** An appeal against the video survey of Varanasi's Gyanvapi Mosque will be heard by the Supreme Court. The survey, according to a Muslim organization is the violation of Places of Worship Act, 1991.

**About:**

- It is described as “An Act to prohibit conversion of any place of worship and to provide for the maintenance of the religious character of any place of worship as it existed on the 15th day of August 1947, and for matters connected therewith or incidental thereto.”

**Exemptions:**

- The disputed site at Ayodhya was exempted from the Act. Due to this exemption, the trial in the Ayodhya case proceeded even after the enforcement of this law.
- The act further exempted, any place of worship which is an ancient and historical monument, or an archaeological site covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- A suit that has been finally settled or disposed of.
- Any dispute that has been settled by the parties or conversion of any place that took place by acquiescence before the Act commenced.

**Penalty:**

- Section 6 of the Act prescribes a punishment of a maximum of three years’ imprisonment along with a fine for contravening the provisions of the Act.

**Criticism:**

- The law has been challenged based on the ground that it bars judicial review, which is a basic feature of the Constitution, imposes an ‘arbitrary irrational retrospective cutoff date,’ and abridges the right to religion of Hindus, Jains, Buddhists, and Sikhs.

## Article 142

**News:** The Supreme Court has invoked its extraordinary powers to do complete justice under Article 142 of the Constitution and ordered the release of A.G. Perarivalan in former Prime Minister Rajiv Gandhi assassination case.

**Why such move?**

- The court ordered Perarivalan’s freedom after considering his extended detention of almost 30 years.
- The court used its constitutional rights because of the extended wait and the Governor’s unwillingness to take a decision on the pardon petition.

**About:**

- Article 142 provides a unique power to the Supreme Court, to do ‘complete justice’ between the parties, where at times law or statute may not provide a remedy, the court can extend itself to put a quietus to a dispute in a manner which would befit the facts of the case.
- The Constituent Assembly emphasised the importance of including such an article in the Constitution.
- The writers of the Constitution believed that this provision was critical for individuals who are forced to suffer because of the legal system’s disadvantageous position in granting required remedies.

**Pardoning powers of the President VS Governor:**

- The court dismissed the Centre’s argument that the President exclusively, and not the Governor, had the power to grant pardon in a case under Section 302 (punishment for murder) of the Indian Penal Code.
- Because, this argument would declare Article 161 a “dead letter,” resulting in an exceptional situation in which Governors’ pardons in murder cases dating back 70 years would be rendered invalid.

## States have equal powers to make GST-related Laws: SC

**News:** The Supreme Court has held that Union and State legislatures have equal, simultaneous and unique powers to make laws on Goods and Services Tax (GST) and the recommendations of the GST Council are not binding on them.

**Key Takeaways:**

- The recommendations of the GST council are the product of a collaborative dialogue involving the Union and the States.

- They are recommendatory in nature.
- To regard them as binding would disrupt fiscal federalism when both the Union and the States are conferred equal power to legislate on GST.

#### **What is the basis of judgement?**

- The court emphasized that Article 246A of the Constitution gives the States power to make laws with respect to GST.
- It treats the Union and the States as “equal units”.
- It confers a simultaneous power (on Union and States) for enacting laws on GST.
- Article 279A, in constituting the GST Council, envisions that neither the Centre nor the States are actually dependent on the other.

#### **What are the articles added/modified to the Constitution by the GST Act?**

- Article 246A: Special Provision for GST
- Article 269A: Levy and Collection of GST for inter-state supply
- Article 279A: GST Council
- Article 286: Restrictions on Tax Imposition
- Article 366: Addition of Important Definitions

## **Inter-State Council**

**News:** Recently, the Inter-State Council (ISC) has been reconstituted with the Prime Minister as Chairman and Chief Ministers of all States and six Union Ministers as members.

#### **Background:**

- As part of the process of reviewing the working of the existing arrangements between the Union and the States, the Government constituted a commission in 1988 under the Chairmanship of Justice R.S. Sarkaria.
- One of the important recommendations of Sarkaria Commission was for establishing a permanent Inter-State Council as an independent national forum for consultation with a mandate well defined in accordance with Article 263 of the Constitution of India.

#### **About:**

- The inter-state council is a recommendatory body that has been empowered to investigate and discuss subjects of common interest between the Union and state(s), or among states.
- It also makes recommendations for better coordination of policy and action on these subjects, and deliberations on matters of general interest to the states, which may be referred to it by its chairman.
- It also deliberates on other matters of general interest to the states as may be referred by the chairman to the council.
- The Council may meet at least thrice in a year.
- There is also a Standing Committee of the Council.

#### **What is the composition?**

- Prime Minister as Chairman
- Chief Ministers of all States Members
- Chief Ministers of Union Territories having a Legislative Assembly and Administrators of UTs not having a Legislative Assembly and Governors of States under President’s Rule (Governor’s Rule in the case of J&K) Members.
- Six Ministers of Cabinet rank in the Union Council of Ministers to be nominated by the Prime Minister Members.

#### **Functions of the Inter-State Council**

- To create a strong institutional framework to promote and support cooperative federalism in the country and activate the council and zonal councils by organising regular meetings.
- Facilitates consideration of all pending and emerging issues of Centre-state and inter-state relations by the zonal councils and inter-state council.
- Develops a sound system to monitor the implementation of recommendations put forward by them.

## Law Commission of India

**News:** The Law Commission is functioning without a chairperson. The Commission, constituted for a term of three years, has not released any report after the tenure of the last Chairperson, Justice B.S. Chauhan, ended in August 2018.

### About:

- It is an executive body established by an order of the Government of India.
- Originally formed in 1955, the commission is reconstituted every three years and so far, 277 reports have been submitted to the government.
- The last Law Commission, under Justice B.S. Chauhan (retd.), had submitted reports and working papers on key issues such as simultaneous elections to the Lok Sabha and the Assemblies and a uniform civil code.

### Composition:

- Apart from having a full-time chairperson, the commission will have four full-time members, including a member-secretary.
- Law and Legislative Secretaries in the Law Ministry will be the ex-officio members of the commission.
- It will also have not more than five part-time members.
- A retired Supreme Court judge or Chief Justice of a High Court will head the Commission.

### Roles and Functions:

- Apart from having a full-time chairperson, the commission will have four full-time members, including a member-secretary.
- Law and Legislative Secretaries in the Law Ministry will be the ex-officio members of the commission.
- It will also have not more than five part-time members.
- A retired Supreme Court judge or Chief Justice of a High Court will head the Commission.

# Social Justice

## India's Civil Registration System Report

**News:** According to the recently released annual report on Vital Statistics based on the 2020 Civil Registration System Report (CRS), the Union Territory of Ladakh recorded the highest sex ratio at birth in the country in 2020.

- The report was published by the Registrar General of India.
- Sex ratio at birth is the number of females born per thousand males. It is an important indicator to map the gender gap of a population.

### Key Highlights of the Report

- **Highest Sex Ratio at Birth (SRB)**
  - In 2020, it is reported by Ladakh (1104) followed by Arunachal Pradesh (1011), Andaman & Nicobar Islands (984), Tripura (974), and Kerala (969).
  - In 2019, the highest sex ratio at birth was reported by Arunachal Pradesh (1024), followed by Nagaland (1001), Mizoram (975) and A&N Islands (965).
  - The information from Maharashtra, Sikkim, Uttar Pradesh and Delhi on sex ratio at birth was 'not available.'
- **Lowest Sex Ratio at Birth**
  - The top five states that recorded Lowest Sex Ratio at Birth in 2020 are Manipur (880), followed by Dadra and Nagar Haveli and Daman and Diu (898), Gujarat (909), Haryana (916) and Madhya Pradesh (921).
  - In 2019, the lowest sex ratio was reported by Gujarat (901), Assam (903), Madhya Pradesh (905) and Jammu & Kashmir (909).
- **Birth Rate**
  - States like Nagaland, Puducherry, Telangana, Manipur, Delhi, Arunachal Pradesh, West Bengal, Kerala, Gujarat, Karnataka, Himachal Pradesh, Uttar Pradesh, Assam, Tamil Nadu, Uttarakhand, Maharashtra, Mizoram, and Chandigarh recorded a decrease in the registered birth rate.
  - Lakshadweep, Bihar, Haryana, Sikkim, Madhya Pradesh and Rajasthan recorded an increase in the registered birth rate.
- **Death Rate**
  - Maharashtra, Gujarat, Andhra Pradesh, Bihar, West Bengal, Nagaland, Haryana, Karnataka, Tamil Nadu, Sikkim, Punjab, Madhya Pradesh, Odisha, Rajasthan, Andaman & Nicobar Island and Assam recorded an increase in death rate in 2020 with respect to 2019.
  - Bihar saw the maximum increase in the death rate with 18.3% followed by Maharashtra with 16.6% and Assam with 14.7%.
  - Meanwhile, states like Manipur, Chandigarh, Telangana, Uttar Pradesh, Uttarakhand, Puducherry, Arunachal Pradesh, and Kerala saw a decrease in death rates in 2020 with respect to 2019.
- **Infant Deaths**
  - The report noted that 1,43,379 infant deaths were registered in 2020 and the share of rural area was only 23.4%, while that of the urban area was 76.6% of total registered infant deaths.
  - Non-registration of infant deaths in rural areas was a cause of concern, due to non-reporting of infant deaths to the Registrars, especially in case of domiciliary events.

## Global Report on Food Crises 2022

**News:** Recently, an annual report named Global Report on Food Crises 2022 was launched by the Global Network Against Food Crises (GNAFC).

- The report is the flagship publication of the GNAFC and is facilitated by the Food Security Information Network (FSIN).

### Key Highlights:

- Some 40 million more people globally experienced acute food insecurity at crisis or worse levels in 2021 than 2020.

- Over half a million Ethiopians, southern Madagascar, South Sudanese and Yemenese are suffering from acute food insecurity.

### What are root causes of food crises?

- **Conflicts**
  - Conflict remains the main driver of food insecurity. (main driver pushing 139 million people in 24 countries/territories into acute food insecurity, up from around 99 million in 23 countries/territories in 2020)
  - While the analysis predates Russia's invasion of Ukraine, the report finds that the war has already exposed the interconnected nature and fragility of global food systems, with serious consequences for global food and nutrition security.
- **Weather extremes**
  - It forced over 23 million people in eight countries / territories into acute food insecurity, up from 15.7 million in 15 countries / territories in 2020.
- **Economic Shocks**
  - Over 30 million people in 21 countries / territories suffered acute food insecurity in 2021 due to economic shocks, down from over 40 million people in 17 countries / territories in 2020.

### Recommendations given:

- There is a need to have an integrated approach to prevention, anticipation, and better targeting to sustainably address the root causes of food crises, including structural rural poverty, marginalization, population growth and fragile food systems.
- The report demonstrated the need for a greater prioritization of smallholder agriculture as a frontline humanitarian response, to overcome access constraints and as a solution for reverting negative long-term trends.
- The need is to strengthen a coordinated approach to ensure that humanitarian, development and peacekeeping activities are delivered in a holistic and coordinated manner.

### What about Food insecurity in India?

- According to the State of Food Security and Nutrition in the World (SOFI) report, 2021 India, the country with the largest stock of grain in the world, accounts for a quarter of the world's food-insecure population.
- Estimates show that, in 2020, over 237 crore people were grappling with food insecurity globally, an increase of about 32 crores from 2019.

### About Food Security Information Network:

- FSIN is a global initiative co-sponsored by Food and Agriculture Organization (FAO), World Food Programme (WFP) and International Food Policy Research Institute (IFPRI) to strengthen food and nutrition security information systems for producing reliable and accurate data to guide analysis and decision-making.

### What is GNAFC?

- It was Founded by the European Union, FAO and WFP in 2016.
- It is an alliance of humanitarian and development actors working together to prevent, prepare for and respond to food crises and support the Sustainable Development Goal to End Hunger (SDG 2).

## NFHS-5 National Report

**News:** Recently, the National Report of the 2nd phase of fifth round of National Family Health Survey (NFHS-5) was released.

### About:

- It comprises detailed information on key domains of population, health and family welfare and associated domains like characteristics of the population; fertility; family planning; infant and child mortality; maternal and child health; nutrition and anaemia; morbidity and healthcare; women's empowerment etc.
- The scope of NFHS-5 is expanded in respect of earlier round by adding new dimensions such as: Death registration, pre-school education, expanded domains of child immunization, components of micro-nutrients to children, menstrual hygiene, frequency of alcohol and tobacco use, additional components of

Non-Communicable Diseases (NCDs), expanded age range for measuring hypertension and diabetes among all aged 15 years and above.

- The main objective of successive rounds of the NFHS has been to provide reliable and comparable data relating to health and family welfare and other emerging areas in India.

#### **Key Highlights:**

- **Total Fertility Rate (TFR)**
  - The Total Fertility Rate (TFR), has further declined from 2.2 to 2.0 at the national level between NNFHS 4 and 5.
  - There are only five states in India which are above replacement level of fertility of 2.1. These states are Bihar, Meghalaya, Uttar Pradesh, Jharkhand and Manipur.
  - Bihar and Meghalaya have the highest fertility rates in the country, while Sikkim and Andaman and Nicobar Islands have the lowest.
  - Muslims' fertility rate has seen the sharpest decline among all religious communities over the past two decades.
- **Underage Marriages**
  - National average of underage marriages has come down.
  - According to NFHS-5, 23.3% women surveyed got married before attaining the legal age of 18 years, down from 26.8% reported in NFHS-4. The figure for underage marriage among men is 17.7% (NFHS-5) and 20.3% (NFHS-4).
  - West Bengal, along with Bihar, remains one of the states with highest rate of underage marriages.
  - Teenage pregnancies are down from 7.9% to 6.8%.
- **Domestic Violence**
  - Domestic violence has come down marginally from 31.2% in 2015-16 to 29.3% in 2019-21.
  - Domestic violence against women is highest in Karnataka at 48%, followed by Bihar, Telangana, Manipur and Tamil Nadu.
  - Lakshadweep has the least domestic violence at 2.1%.
- **Institutional Births**
  - It increased from 79% to 89% in India.
  - In rural areas around 87% births being delivered in institutions and the same is 94% in urban areas.
- **Immunisation Level**
  - More than three-fourths (77%) children age 12-23 months were fully immunised, compared with 62% in NFHS-4.
- **Stunting**
  - The level of stunting among children under five years has marginally declined from 38% to 36% in the country since the last four years.
  - Stunting is higher among children in rural areas (37%) than urban areas (30%) in 2019-21.
- **Obesity**
  - Compared with NFHS-4, the prevalence of overweight or obesity has increased in most States/UTs in NFHS-5.
  - At the national level, it increased from 21% to 24% among women and 19% to 23% among men.

#### **Sustainable Development Goals:**

- NFHS-5 shows an overall improvement in Sustainable Development Goals indicators in all States/Union Territories (UTs).
- The extent to which married women usually participate in three household decisions indicates that their participation in decision-making is high. Household decisions include health care for herself, making major household purchases, visiting her family or relatives.
- The prevalence of women having a bank or savings account that they use has increased from 53% to 79% in the last four years.

#### **From Prelims perspective:**

**Total Fertility Rate (TFR)** - Replacement level fertility is the total fertility rate—the average number of children born per woman—at which a population exactly replaces itself from one generation to the next, without migration.



## Global Report on Assistive Technology

**News:** Recently, the World Health Organisation (WHO) and United Nations Children's Fund (UNICEF) jointly launched the first Global Report on Assistive Technology (GReAT).

### What is assistive technology?

- AT is any item, piece of equipment, software program or product system that is used to increase, maintain or improve the functional capabilities of persons with disabilities. For example, it includes technologies and devices such as prosthetics, braces, walkers, special switches, screen-readers and specialized curricular software.
- Priority Assistive Products List launched by WHO in 2018 include hearing aids, wheelchairs, communication aids, spectacles, artificial limbs, pill organisers, memory aids and other essential items for the elderly and person with disabilities.

### Highlights of the Report:

- More than 2.5 billion people need one or more assistive products, such as wheelchairs, hearing aids, or apps that support communication and cognition.
- A billion of them are denied access, particularly in low- and middle-income countries, where access can be as low as 3% of the need for these life-changing products.
- The number of people in need of one or more assistive products is likely to rise to 3.5 billion by 2050, due to populations aging and the prevalence of non-communicable diseases rising across the world.
- Affordability is the major barrier to access.
- A survey of 70 countries featured in the report found large gaps in service provision and trained workforce for assistive technology, especially in the domains of cognition, communication and self-care.

### What does the problem look like in India?

- The 2011 census puts the national estimate of the number of people with disabilities at 2.21% of the total population.
- The countries disabled population increased by 22.4% between 2001 and 2011 census periods.
- Subsequent to the notification of the Rights of Persons with Disabilities (RPWD) Act in 2016, the 76th round (July- December 2018) of the National Sample Survey (NSS) reported that among persons with disabilities, 21.8% reported receiving aid/help from the government and another 1.8% from other organisations.

### What are the government initiatives?

- Ongoing initiatives such as Make in India, Digital India along with the health insurance schemes such as Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PM-JAY) can cater to the AT demands of the most vulnerable 40% of the population to address their rehabilitation needs.
- Assistance to Disabled Persons Scheme
- Accessible India Campaign – Creation of Accessible Environment for PwDs
- National Fellowship for Students with Disabilities
- Unique Disability Identification Project
- DeenDayal Disabled Rehabilitation Scheme

## The State of Inequality in India report

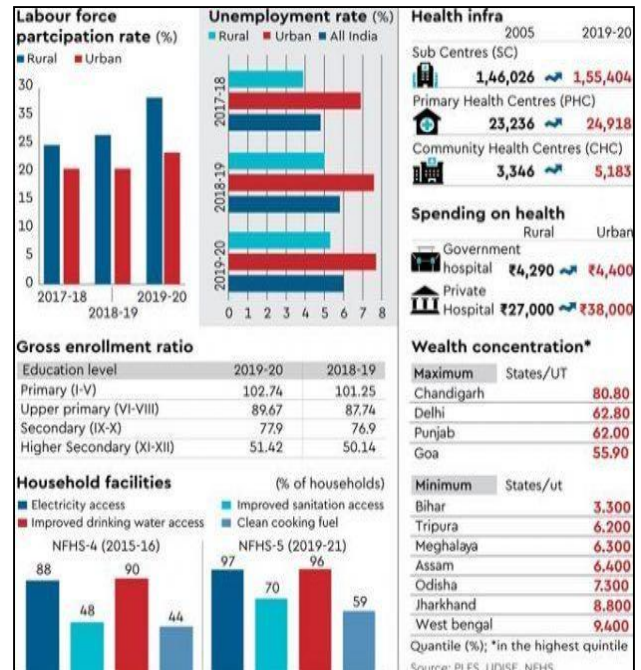
**News:** Recently, the 'State of Inequality in India' Report was released by the Economic Advisory Council to the Prime Minister (EAC-PM).

### About:

- The report compiles information on inequities across sectors of health, education, household and the labor market.
- It consists of two parts – Economic Facets and Socio-Economic manifestations which looks at 5 key areas that influence the nature and experience of inequality.
- The report is based on data derived from various rounds of the Periodic labor force survey (PLFS) and National Family and Health survey and United Information system for Education plus.

## Highlights of Report:

- Wealth Concentration**
  - Urban areas have a 44.4% wealth concentration in the highest quintile (20%) compared to meager 7.1% concentration in rural areas.
- Health Infrastructure**
  - There has been considerable improvement in increasing the infrastructural capacity with a targeted focus on rural areas. There has been rise in the number of health centres in India now compared to earlier years.
- Unemployment Rate**
  - India's unemployment rate is 4.8% (2019-20), and the worker population ratio is 46.8%.
  - In 2019-20, among different employment categories, the highest percentage was self-employed workers (45.78%), followed by regular salaried workers (33.5%) and casual workers (20.71%).
  - The share of self-employed workers also happens to be the highest in the lowest income categories.
- Education**
  - The Gross enrolment ratio has also increased between 2018-19 and 2019-20 at the primary, upper primary, secondary and higher secondary.
- Health**
  - The results of NFHS-4 (2015-16) and NFHS-5 (2019-21) have shown that 58.6% of women received antenatal check-ups in the first trimester in 2015-16, which increased to 70% by 2019-21.
  - 78% of women received postnatal care from a doctor or auxiliary nurse within two days of delivery, and 79.1% of children received postnatal care within two days of delivery.



However, nutritional deprivation in terms of overweight, underweight, and prevalence of anaemia (especially in children, adolescent girls and pregnant women) remains areas of huge concern requiring urgent attention. Additionally, low health coverage, leading to high out-of-pocket expenditure, directly affects poverty indices.

## National Achievement Survey (NAS) - 2021

**News:** The Ministry of Education released the National Achievement Survey 2021 report.

- The Triennial Survey was conducted in November 2021.
- About 34 lakh students of 1.18 lakh schools in 720 districts from both rural and urban areas have participated in NAS 2021.

### About:

- It is a nationwide survey to assess the learning outcomes and health of the education system. It is the largest, nationwide, sample-based education survey conducted across India.
- It is undertaken by the Ministry of Education.
- It provides a system-level reflection on the effectiveness of school education. It collects information on relevant background variables such as school environment, teaching processes, and student home and background factors.
- It covers the whole spectrum of schools including Government schools (both State and Central government), Government-aided schools, and Private schools across India.
- The NAS 2021 was conducted in 22 mediums of instruction that covered languages such as English, Assamese, Bengali, Gujarati, Kannada, Manipuri, Mizo, Lepcha etc.

- It was conducted in different subjects for different grades. The grades include Class 3 and 5, Class 8 and Class 10. Subjects such as Science, Mathematics, Languages, English, Social Science were covered.

### **Key Highlights of Report:**

- **National Average**
  - The national average percentage of students for class third was 59%, which declined by 10% to 49% in class fifth. It further declined to 41.9% in class eight and then 37.8% in class 10.
  - The performance recorded a decline in almost all subjects.
  - For instance, the mathematics score nationally was 57% in class third, dropping by almost 10% to 44% in fifth, and to 36% in class eighth, and 32% in class 10th.
  - The language score nationally was 62% in class third, and dropped to 52% in class fifth, and to 53% in class eighth.
  - For science, the national score declined from 39% in class eighth to 35% in class 10.
- **Rural and Urban Areas**
  - The average performance of schools in rural areas remained “significantly below” those urban areas in same states and union territories (UTs).
- **Social-Group Wise Performance**
  - The performance of students from the schedule caste (SC)/schedule tribe (ST)/Other Backward Classes (OBC) categories remained lower than that of students from the general category.
- **Gender-wise Performance**
  - The average performance of girls remained better than the boys in almost all subjects across the classes, both nationally and at state level.
- **How has perception of students towards learning changed?**
  - The perception of students about learning at home during the pandemic when the schools remained closed, and 78% of students termed it as burdensome with a lot of assignments.
  - At least 38% of students faced difficulties in learning at home, while 24% said they did not have digital devices at home.

### **How did the states fare?**

- Majority of states have performed significantly below the overall national score. However, some states such as Kerala, Rajasthan, Maharashtra and Punjab performed better than the national average.
- Delhi’s performance in class eighth and class 10 was better when compared with the national average.
- Punjab has scored highest in all subjects for classes 3, 5 and 8.

## **Supreme Court recognizes sex work as a ‘profession’**

**News:** In a momentous order, the Supreme Court of India recognised sex work to be a ‘profession.’

The apex court was hearing a plea that has raised the problems faced by sex workers due to the COVID-19 pandemic.

The plea has highlighted the destitution faced by sex workers on account of COVID-19 and sought relief measures for over nine lakh women and transgender sex workers across India.

### **What are the guidelines issues by Supreme Court?**

- Police forces in all states and Union territories should treat sex workers with dignity and not to abuse them, verbally or physically.
- The authorities have a duty to protect them under the Immoral Traffic (Prevention) Act, 1956.
- The police and other law enforcement agencies should be sensitised to the rights of sex workers.
- The newly introduced Section 354C, IPC which makes voyeurism a criminal offence, should be strictly enforced against electronic media, in order to prohibit telecasting photos of sex workers with their clients in the garb of capturing the rescue operation.
- State governments should do a survey of shelter homes so that cases of adult women who are detained against their will can be reviewed and processed for release in a time-bound manner.
- The Central Government and the State Governments, through National Legal Services Authority, State Legal Services Authority and District Legal Services Authority, should carry out workshops for educating the sex workers about their rights.

### **What are the challenges?**

- Sex workers are exposed to a slew of abuses that range from physical to mental attacks.
- Most of them do not have access to clean and safe housing, as they are refused outrightly by owners or the society.
- Access to essential health services are limited.

### **Important Supreme Court Judgements:**

- In Manoj Shaw vs State of West Bengal (2003), the Calcutta High Court observed that Sex workers should be treated as victims of crime rather than the accused.
- In Budhadev Karmaskar vs State of West Bengal (2011), the High Court observed that sex workers are also entitled to live a dignified life as guaranteed under Article 21 of the Constitution.
- In Kajal Mukesh Singh vs State of Maharashtra (2021), The Bombay High Court said 'Prostitution is not an offence, a woman has a right to choose her vocation'.

Tathastu-ICS

# International Relations

## Chittagong Port

**News:** EAM Dr. S Jaishankar, recently visited Bangladesh and had a meeting with PM Sheikh Hasina on April 28, 2022. An important development emerged out of the meetings. PM Sheikh Hasina has reportedly have told that India's northeastern states could use Bangladesh's Chittagong Port.

### Chittagong Port:

- The Chittagong/Chattogram Port is the main seaport of Bangladesh.
- It is located in the port city of Chittagong and on the banks of the Karnaphuli River,
- The port handles eighty percent of Bangladesh's export-import trade, and has been used by India, Nepal and Bhutan for transshipment.
- According to Lloyd's, it ranked as the 58th busiest container port in the world in 2019. The port is one of the oldest in the world.
- Chittagong Port is now being developed and modernized with Chinese investment and help. It was widely believed that China will retain the right to use this port according to its plans and needs.

### How can access to the port benefit India?

- Partition of the Indian subcontinent left India's Northeast without direct access to the sea. Still, the region was able to access ports in erstwhile East Pakistan till the 1965 war. In the decades since, the states of Northeast India have used an overland route via the narrow Siliguri Corridor to Kolkata Port.
- The route from the Northeast to Chittagong port is shorter than the route to Kolkata port.
- The distance from Agartala in the state of Tripura to Kolkata port is about 1,600 km while to Chittagong it is just 450 km. Transport of cargo to Chittagong port will therefore take less time and cost less as well.
- Lend a fillip to multi-modal connectivity between India and Bangladesh
- Ease stress on supply chains that have been disrupted by the pandemic
- Important bridge for India to reach Southeast Asia, East Asia and beyond. Thus it will further help India's Act East Policy.
- India's relentless efforts to get such access resulted in Bangladesh signing a Memorandum of Understanding in 2015 and eventually a treaty in 2018. However, apart from conducting a trial run there has been no progress in this regard.
- Bangladesh's location in the Bay of Bengal, which is the northern extension of the strategically important Indian Ocean, has made Bangladesh the focus of several global and regional powers including the U.S., China, Japan, and India.
- Thus, to contain Chinese presence in the Indo-Pacific region, the QUAD was formed. Both India and US have been pressing Dhaka to the join QUAD.



Emphasizing on connectivity is crucial not just to achieve economic gains but also to be part of global supply chain and having an upper hand as far as our geopolitical interests are concerned. Bangladesh is extremely important in our neighborhood first policy. To maintain our presence across the Indian subcontinent and beyond in the South-East Asian region, having access to port cities is necessary.

## India-Nordic Countries Bilateral Talks

**News:** Recently, the Prime Minister of India held a series of bilateral meetings with his counterparts from Denmark, Norway, Sweden, Iceland and Finland.

### Background:

- Besides economy, trade and investment, the summit can be seen from the perspective of the concept of the welfare state that goes along with capitalism and democratic practices, blending the welfare model with the market economy.
- India invited Nordic companies for investing in the blue economy sector, especially in Sagarmala Project.
- India's Arctic Policy provides a good framework for expansion of India-Nordic cooperation in the Arctic region.
- The Nordic countries reiterated their support for India's permanent membership of a reformed and expanded United Nation Security Council.
- The first summit sought to explore an extension of the application to New Delhi's flagship programmes like Make in India, Startup India, Digital India and Clean India, besides the support of the Nordic Countries Sustainable Cities Project to India's Smart Cities project.
- At the first summit, the Nordic countries welcomed India's application for membership in the Nuclear Suppliers' Group.

### Highlights:

- **India-Norway** - Both leaders discussed the potential for deepening engagement in areas like Blue Economy, renewable energy, green hydrogen, solar and wind projects, green shipping, fisheries, water management, rainwater harvesting, space cooperation, long term Infrastructure investment, health and culture.
- **India-Sweden** - Emphasis was given on the need to expand scope of the jointly launched Leadership group on Industry Transition (LeadIT) initiative. It was a global initiative launched by the 2 nations at UN Climate Action Summit to help guide the world's heaviest greenhouse gas emitting industries toward a low-carbon economy.
- **India-Finland** - Discussions were made to cooperate in emerging fields of Artificial Intelligence, quantum computing, future mobile technologies, smart grids.
- **India-Denmark** - Discussed a wide range of issues of mutual interest to boost bilateral relations, including the war in Ukraine, the India-European Union (EU) free trade deal and the situation in the Indo-Pacific. Agreed to further strengthen the Green Strategic Partnership with a focus on green hydrogen, renewable energy and wastewater management.
- **India-Iceland** - Both leaders discussed ways to further strengthen economic cooperation especially in the sectors of geothermal energy, Blue Economy, Arctic, renewable energy, fisheries, food processing, education including digital universities, and culture. Discussions also took place on expediting the India-European Free Trade Association (EFTA) trade negotiations.



## NATO membership for Finland and Sweden

**News:** Finland and Sweden have shown interest to join the North Atlantic Treaty Organization (NATO)

### Why Finland and Sweden are not NATO members?

- Finland has stayed out of such alliances because it always wanted to maintain cordial relations with its neighbor, Russia.
- However, the Russian invasion of Ukraine and growing hostility in the region has prompted the Finns to have a re-think about their existing policies and a change in approach was indeed the need of the hour.
- As far as Sweden is concerned they did not join the alliance so far due to ideological reasons.

### How would the membership impact and benefit NATO?

- Being a member of NATO will give the nations a security guarantee under the alliance's 'Article 5' on collective defence. The article essentially guarantees a military response and protection by NATO countries if any member of the organisation comes under attack.
- It would strengthen NATO's presence in the region of Baltic Sea. Once Finland joins the alliance, the length of borders Russia shares with NATO would double.
- The move would counter Russia's aggression. It would mean that Russia's invasion of Ukraine was counterproductive and it only strengthens Western Unity and military preparedness.

### How have other nations reacted to recent developments?

- Russia threatened to take military measures if the membership goes through and warned Finland to be aware of the consequences of this move.
- Turkey opposes Finland and Sweden joining NATO. The Turkish government claimed that it could use its membership in the Western alliance to veto moves to admit the two nations.
- The Turkish government cited Sweden and other Scandinavian countries for supporting Kurdish militants and other groups it considers terrorist.
- European countries and US have welcomed the announcement. Norway and Denmark have said they will push for NATO admission faster. The US also extended support by claiming that it is ready to provide necessary military support until they formally join the alliance.

## Sri Lanka's 21<sup>st</sup> Constitutional Amendment

**News:** The government of Sri Lanka intends to introduce the 21st Constitutional Amendment Bill. The 21st Constitutional Amendment seeks to repeal the 20th Amendment.

### About:

- It seeks to reduce the Presidency to a ceremonial position, retaining the powers of the President on all three armed forces.
- However, almost all other key powers pertaining to governance, and cabinet ministers will be handed over to the Prime Minister.
- It seeks to transfer powers of making key appointments from the President to the Constitutional Council.
- The President would be required to act on the Prime Minister's advice to determine the scope and functions of ministries and appoint ministers, deputy ministers and state ministers.

### What is happening in Sri Lanka?

- The amendment comes at a time when Sri Lanka is facing its worst economic and political crisis.
- Shortage of Forex reserves has led to long queues for fuel, cooking gas and other essentials.
- Protestors have been gathering across the island nation, calling for resignation of President Gotabaya, his brother Mahinda Rajapaksa resigned as PM.

### Need for Amendments:

- It seeks to restore peace in the country.
- It aims to address the governance issue prevailing in the nation.

## Indo-Pacific Economic Framework

**News:** Recently, India's Prime Minister participated in an event in Tokyo to launch the Indo-Pacific Economic Framework (IPEF).

### Significance:

- A US-led initiative that aims to strengthen economic partnership among participating countries to enhance resilience, sustainability, inclusiveness, economic growth, fairness and competitiveness in the Indo-Pacific region.
- It is a declaration of a collective desire to make the Indo-Pacific region an engine of global economic growth.
- The Indo-Pacific covers half the population of the world and more than 60% of the global GDP and the nations who will join this framework in the future, are signing up to work toward an economic vision that will deliver for all people.
- The framework will focus on integrating partner countries in four areas:
  - **Trade** – It intends to build inclusive, free, and fair trade commitments that advance a broad set of objectives that fuels economic activity and investments.
  - **Supply Chains** – IPEF is committed to improving transparency, diversity, security, and sustainability in supply chains to make them more resilient and well-integrated.
  - **Clean Energy, Decarbonization, and infrastructure** - it plans to accelerate the development and deployment of clean energy technologies to decarbonize our economies and build resilience to climate impacts.
  - **Tax and Anti-Corruption** - It is committed to promoting fair competition by enacting and enforcing effective and robust tax, anti-money laundering, and anti-bribery regimes in line with existing multilateral obligations, standards, and agreements to curb tax evasion and corruption in the Indo-Pacific region.

### What is India's vision for Indo-Pacific Region?

- India has been active in championing a Free and Open Indo-Pacific. The US, Australia, and the members of the ASEAN have all expressed a common view that India plays a greater role in the region.
- India's trade in this region is growing rapidly, with overseas investments being directed towards the East, e.g., the Comprehensive Economic Partnership Agreements with Japan, South Korea, and Singapore, and the Free Trade Agreements with ASEAN (Association of Southeast Asian Nations) and Thailand.
- India's view is to work with other like-minded countries in the Indo-Pacific region to cooperatively manage a rules-based multipolar regional order and prevent any single power from dominating the region or its waterways.
- India's strategic vision for the Indian Ocean i.e. Security and Growth for All in the Region (SAGAR) also works in tandem with QUAD's overall vision for the Indo-Pacific region. Just as QUAD, India through SAGAR mission seeks to deepen economic and security cooperation with its maritime neighbors and assist in building their maritime security capabilities.

## Collective Security Treaty Organisation

**News:** The Collective Security Treaty Organization (CSTO) has marked its 30th year, at anniversary summit hosted by Moscow recently.

### About:

- It is an intergovernmental military alliance (six countries) that came into effect in 2002.
- Its origin can be traced to the Collective Security Treaty, 1992 (Tashkent Treaty).
- The headquarters is located in the Russian capital of Moscow.
- The objectives of the CSTO is to strengthen peace, international and regional security including cybersecurity and stability, the protection on a collective basis of the independence, territorial integrity and sovereignty of the member states.



## Composition:



## What does the membership imply?

- CSTO membership means that member states are barred from joining other military alliances, limiting, for example, their relationship with NATO.
- Most importantly, membership presumes certain key security assurances – the most significant of which is deterring military aggression by third countries.
- In the CSTO, aggression against one signatory is perceived as aggression against all.

## India-US Trade Ties

**News:** The U.S. surpassed China to become India's top trading partner in 2021-22, reflecting strengthening economic ties between the two countries.

### About:

- The bilateral trade between the U.S. and India stood at \$119.42 billion in 2021-22 as against \$80.51 billion in 2020-21.
- Exports to the U.S. increased to \$76.11 billion in 2021-22 from \$51.62 billion in the previous fiscal year, while imports rose to \$43.31 billion from about \$29 billion.
- Experts believe that the trend of increasing bilateral trade with the U.S. will continue in the coming years also as New Delhi and Washington are engaged in strengthening economic ties.
- India has joined a U.S.-led initiative to set up an Indo-Pacific Economic Framework (IPEF) and this move would help boost economic ties further.

### India-China Trade:

- During 2021-22, India's two-way commerce with China aggregated at \$115.42 billion as compared to \$86.4 billion in 2020-21.
- Exports to China marginally increased to \$21.25 billion last fiscal year from \$21.18 billion in 2020-21, while imports jumped to \$94.16 billion from about \$65.21 billion in 2020-21.
- Trade gap rose to \$72.91 billion in 2021-22 from \$44 billion in the previous fiscal year.

# General Studies – 3

## **Economic Development**

1. Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.
2. Inclusive growth and issues arising from it.
3. Government Budgeting.
4. Major crops-cropping patterns in various parts of the country, - different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.
5. Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System- objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing.
6. Food processing and related industries in India- scope' and significance, location, upstream and downstream requirements, supply chain management.
7. Land reforms in India.
8. Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.
9. Infrastructure: Energy, Ports, Roads, Airports, Railways etc.
10. Investment models.

## **Technology**

11. Science and Technology- developments and their applications and effects in everyday life.
12. Achievements of Indians in science & technology; indigenization of technology and developing new technology.
13. Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights.

## **Environment & Bio-diversity**

14. Conservation, environmental pollution and degradation, environmental impact assessment.

## **Disaster Management & Security**

15. Disaster and disaster management.
16. Linkages between development and spread of extremism.
17. Role of external state and non-state actors in creating challenges to internal security.
18. Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention.
19. Security challenges and their management in border areas - linkages of organized crime with terrorism.
20. Various Security forces and agencies and their mandate.

# Economic Development

## RBI's report on Currency and Finance

**News:** According to recent Reserve Bank of India's (RBI) Report on Currency and Finance (RCF), the Indian economy may take more than a decade to overcome the losses caused by the outbreak of Covid-19 pandemic.

- The theme of the report is "Revive and Reconstruct" in the context of nurturing a durable recovery post-Covid-19 and rising trend growth in the medium-term.

### Concerns highlighted by the Report:

- Its economic impact may linger for many more years and confront Indian Economy with the challenges of rebuilding livelihoods, safeguarding businesses and reviving the economy.
- India suffered among the biggest pandemic induced losses in the world in terms of output, lives and livelihoods, which may take years to recover.
- The pre-Covid trend growth rate works out to 6.6% and excluding the slowdown years it works out to 7.1%. Taking actual growth rate of (-) 6.6% for 2020-21, 8.9% for 2021-22 and assuming growth rate of 7.2% for 2022-23 and 7.5% beyond that, India is expected to overcome Covid-19 losses in 2034-35.
- The Russia-Ukraine conflict has also dampened the momentum of recovery, with its impact transmitting through record high commodity prices, weaker global growth outlook and tighter global financial conditions.
- Concerns surrounding deglobalisation impacting future trade, capital flows and supply chains have amplified uncertainties for the business environment.

### Reforms as suggested by Report:

- Seven wheels of Economic Progress – The blueprint of reforms proposed in the report revolves around seven wheels of economic progress. It includes:
  - Aggregate demand.
  - Aggregate supply.
  - Institutions, intermediaries and markets.
  - Macroeconomic stability and policy coordination.
  - Productivity and technological progress.
  - Structural change.
  - Sustainability.
- Timely rebalancing of monetary and fiscal policies will likely be the first step in this journey.
- Reducing general government debt to below 66% of GDP over the next five years is important to secure India's medium-term growth prospects.
- Price stability is a necessary precondition for strong and sustainable growth.
- Following structural reforms are needed:
  - Enhancing access to litigation free low-cost land.
  - Raising the quality of labor through public expenditure on education and health and the Skill India Mission.
  - Scaling up R&D activities with an emphasis on innovation and technology.
  - Creating an enabling environment for start-ups and unicorns.
  - Rationalization of subsidies that promote inefficiencies.
  - Encouraging urban agglomerations by improving the housing and physical infrastructure.
- Industrial revolution 4.0 and committed transition to a net-zero emission target warrant a policy ecosystem that facilitates provision of adequate access to risk capital and a globally competitive environment for doing business.
- India's ongoing and future free trade agreement (FTA) negotiations may focus on the transfer of technology and better trade terms for high quality imports from partner countries to improve the outlook for exports and domestic manufacturing.

## RBI hikes Repo Rate and Cash Reserve Ratio

**News:** The Reserve Bank of India's Monetary Policy Committee (MPC) has increased the policy Repo Rate by 40 basis points to 4.40%, with immediate effect and Cash Reserve Ratio (CRR) of banks by 50 basis points to 4.5% of Net Demand and Time Liabilities (NDTL).

### Reasons behind the hike?

- Globally, there has been a sharp rise in inflation due to current geopolitical tensions. Inflation has risen to its highest level in the last 3-4 decades in major economies with global crude oil prices remaining volatile and above USD 100 per barrel.
- The hike in Repo rate and CRR is aimed at reining in elevated inflation amid the global turbulence in the wake of the Ukraine war.
- The RBI aimed to keep inflation which is already close to 7% at its desired level and control and monitor money flow into the banking system.
- There has also been a spike in fertiliser prices and other input costs, which has a direct impact on food prices in India.
- There was a spike in the headline CPI (Consumer Price Inflation) inflation to 6.95% in March 2022.

### How does hike in Repo Rate impact you?

- It is expected to push up interest rates in the banking system. Equated Monthly Installments (EMIs) on home, vehicle and other personal and corporate loans are likely to go up.
- Deposit rate, mainly fixed term rates, are also set to rise.
- Consumption and demand are impacted by Repo rate hike. For example, knowing that Home Loans, Car loans will get costlier. The customers postpone their demand with an intention to buy it later at a reduced cost.

### How does hike in CRR impact Banks?

- The hike will suck out Rs 87,000 crore from the banking system. Thus, lendable resources of banks will come down.
- It also subsequently results in increased cost of funds and banks net interest margins could get adversely impacted.
- Net interest margin (NIM) is a measure of the difference between the interest income earned by a bank or other financial institution and the interest it pays out to its lenders (for example, depositors), relative to the amount of their assets that earn interest.

### What is the Monetary Policy Committee?

- It is a statutory and institutionalized framework under the Reserve Bank of India Act, 1934, for maintaining price stability, while keeping in mind the objective of growth.
- The Governor of RBI is ex-officio Chairman of the committee.
- The MPC determines the policy interest rate (repo rate) required to achieve the inflation target (4%).
- An RBI-appointed committee led by the then deputy governor Urjit Patel in 2014 recommended the establishment of the Monetary Policy Committee.

## Sagarmala Projects

**News:** Recently, the Union Minister for Ports, Shipping and Waterways (MoPSW) chaired the meeting of the National Sagarmala Apex Committee (NSAC) at Vigyan Bhawan, in New Delhi.

- NSAC is the apex body providing policy directions and guidance for port led development-Sagarmala projects and reviews its implementation. It was constituted in May, 2015 by the Union Cabinet.
- Holistic development of coastal communities through a new initiative 'Sagartat Samridhhi Yojana' was discussed in the meeting.

### **About:**

- The Sagarmala Programme was approved by the Union Cabinet in 2015 which aims at holistic port infrastructure development along the 7,516-km long coastline through modernisation, mechanisation and computerisation.
- The vision of the Sagarmala Programme is to reduce logistics costs for EXIM (Export-Import) and domestic trade with minimal infrastructure investment.
- Sagarmala could boost India's merchandise exports to USD 110 billion by 2025 and create an estimated 10 million new jobs (four million in direct employment).
- The Ministry has started the ambitious Project of Sagarmala Seaplane Services (SSPS) with potential airline operators.

### **Components:**

- Port Modernization and development of new Greenfield ports.
- Enhancing the connectivity of the ports to the hinterland, optimizing cost and time of cargo movement through multi-modal logistics solutions including domestic waterways (inland water transport and coastal shipping).
- Promoting sustainable development of coastal communities through skill development & livelihood generation activities, fisheries development, coastal tourism.
- Impetus to move cargo through the sustainable and environment-friendly coastal and inland waterways mode.

### **Sagartat Samridhi Yojana**

- Prime Minister launched the Sagarmala – Sagartat Samridhi Yojana during the release of “Maritime India Vision 2030” in March 2021.
- The four key areas in which this initiative falls include Coastal Infrastructure Development, Coastal Tourism, Coastal Industrial Development and Coastal Community Development.

## **Indian Rupee tanks to an all-time low**

**News:** The Indian rupee fell to an all-time low of 77.44 against the U.S. Dollar.

### **About:**

- Currency depreciation is a fall in the value of a currency in a floating exchange rate system.
- Rupee depreciation means that the rupee has become less valuable with respect to the dollar.
- It means that the rupee is now weaker than what it used to be earlier.
- For example: USD 1 used to equal to Rs. 70, now USD 1 is equal to Rs. 77, implying that the rupee has depreciated relative to the dollar i.e. it takes more rupees to purchase a dollar.

### **How Depreciation of Indian Rupee is a double-edged sword for the RBI?**

- Weaker rupee should theoretically give a boost to India's exports, but in an environment of uncertainty and weak global demand, a fall in the external value of rupee may not translate into higher exports.
- It poses risk of imported inflation, and may make it difficult for the central bank to maintain interest rates at a record low for longer.
- India meets more than two-thirds of its domestic oil requirements through imports.
- India is also one of the top importers of edible oils. A weaker currency will further escalate imported edible oil prices and lead to a higher food inflation.

### **Reasons behind fall of Indian Rupee in recent times:**

- The outflow of dollars is a result of high crude prices and the correction in equity markets is also causing adverse flow of dollars.
- Steps taken by RBI to tighten the monetary policy to counter rising inflation has also led to depreciation.

- A sell-off in the global equity markets which was triggered by the hike in interest rates by the U.S. Federal Reserve (central bank), the war in Europe and growth concerns in China due to the Covid-19 surge, led to the rupee depreciation.

#### **Implications on the overall economy:**

- Widening of Current account deficit, depleting foreign exchange reserves and weakening of the Rupee.
- With higher landed prices of crude oil and other crucial imports, the economy is definitely inching towards cost-push inflation.
- Companies may not be allowed to fully pass on the burden of high costs to consumers, which, in turn, affects government dividend earnings, raising questions about budgeted fiscal deficits.

## **Low Wheat Procurement – Reasons and Impact**

**News:** Wheat procurement by government agencies is set to dip to a 15-year low in the current marketing season, from an all-time high scale last year.

#### **Reasons for low procurement?**

- Export demand has risen owing to the Russia-Ukraine war. The war has led to skyrocketing prices and a further increase in demand for Indian grain.
- Farmers find it more profitable to export wheat now.
- The sudden spike in temperatures from the second half of March when the crop was in the grain-filling stage, with the kernels still accumulating starch, protein and other dry matter has taken a toll on yields.

#### **How will it help the farmers?**

- Farmers will certainly benefit from the scenario as they are being offered a price above the MSP. Amid the Russia-Ukraine crisis, new markets in countries like Israel, Egypt, Tanzania and Mozambique have opened up for India.
- However, on the other hand, if private traders continue to buy above MSP, eventually that could stoke inflation.

#### **Prelims perspective about Wheat:**

- It is the second most important cereal crop in India after rice.
- Wheat is a rabi crop that requires a cool growing season and bright sunshine at the time of ripening.
- Temperature: Between 10-15°C (Sowing time) and 21-26°C (Ripening & Harvesting) with bright sunlight.
- Rainfall: Around 75-100 cm.
- Soil Type: Well-drained fertile loamy and clayey loamy (Ganga-Satluj plains and black soil region of the Deccan).

## **FPI's exit and RBI acquires Gold**

**News:** The Reserve Bank of India (RBI) added another 16.58 tonnes of gold to the country's foreign exchange reserves in the last six months, bringing the country's gold holdings to more than 700 tonnes (around 760.42).

- Gold was acquired by the RBI at a time when Foreign Portfolio Investors (FPIs) left India, and forex reserves dropped by USD44.73 billion from USD 642.45 billion in September 2021 to USD 597.72 billion on April 29, 2022.
- Now, India is the ninth-largest holder of gold reserves.

#### **About FPI:**

- Foreign portfolio investment (FPI) consists of securities and other financial assets passively held by foreign investors. It does not provide the investor with direct ownership of financial assets and is relatively liquid depending on the volatility of the market. Examples of FPIs include stocks, bonds, mutual funds, exchange traded funds, American Depositary Receipts (ADRs), and Global Depositary Receipts (GDRs).
- FPI is part of a country's capital account and is shown on its Balance of Payments
- FPI is referred to as 'hot money' because of its tendency to flee at the first signs of trouble in an economy. FPI is more liquid, volatile and hence riskier than FDI.

## Impact of FPI:

- Access to increased amount of Credit in Foreign countries
- Increases the liquidity of domestic capital markets. Increased liquidity in market ensures it becomes more profound and a comprehensive range of investments can be financed.
- Equity markets get stronger as increased competition for financing leads to rewarding superior performance, prospects and corporate governance.

## Foreign Exchange Reserves:

- Foreign exchange reserves are assets held on reserve by a central bank in foreign currencies, which can include bonds, treasury bills and other government securities. It needs to be noted that most foreign exchange reserves are held in US dollars.
- India's Forex Reserve include Foreign Currency Assets, Gold Reserves, Special Drawing Rights and Reserve Tranche Position with the IMF.

## What does rising Forex reserve imply?

- The rising forex reserves give comfort to the government and the RBI in managing India's external and internal financial issues.
- The Forex reserves serves as a cushion during the event of BOP crisis. It limits the country against external vulnerability by maintaining foreign currency liquidity.
- It has helped the rupee strengthen against the dollar.
- Reserves will provide a level of confidence to markets and investors that a country can meet its external obligations.

Distinction between FDI and FPI	
FDI	FPI
1. It is long-term investment	1. It is generally short-term investment
2. Investment in physical assets	2. Investment in financial assets
3. Aim is to increase enterprise capacity or productivity or change management control	3. Aim is to increase capital availability
4. Leads to technology transfer, access to markets and management inputs	4. FPI results in only capital inflows
5. FDI flows into the primary market	5. FPI flows into the secondary market
6. Entry and exit is relatively difficult	6. Entry and exist is relatively easy
7. FDI is eligible for profits of the company	7. FPI is eligible for capital gain
8. Does not tend to be speculative	8. Tends to be speculative
9. Direct impact on employment of labour and wages	9. No direct impact on employment of labour and wages
	10. Fleeting interest in mgt.

## Food Inflation – Causes and Remedies

**News:** Food prices around the world have soared to record levels this year as the Russia-Ukraine war slashes key exports of wheat and fertilizer from those countries, and at the same time events such as droughts, floods and heat fueled by climate change claim more harvests.

### Causes of Food Inflation:

- Russia-Ukraine Conflict – They supply around 30% of global wheat exports, but due to the war they have fallen considerably.
- High Stock of Wheat – National stocks of wheat mostly eaten in the countries where it is grown remain relatively high. But the drop in exports from Russia and Ukraine has driven up competition for the remaining wheat on the global market, leading to higher costs that are particularly painful for poorer, debt-ridden countries that rely heavily on imports.
- Since the last food price crises of 2007-2008 and 2011-2012, governments have failed to curb excessive speculation and ensure transparency of food stocks and commodity markets.

### Remedies:

- Improving Grain storage infrastructure especially in countries highly reliant on imports and helping those countries grow more staple food at home.
- Planting a wider variety of crops in order to reduce dependence on just a few grains could boost food security.
- Because a large share of the world's grain goes to feeding livestock, persuading people to eat less meat and dairy could boost grain supplies dramatically. The global shortage of cereals on export markets this year is expected to be 20-25 million tonnes – but if Europeans alone cut their consumption of animal products by 10%, they could reduce demand by 18-19 million tonnes.
- Investing in climate smart-farming, to protect harvests as the planet warms, would help shore up global food supplies.

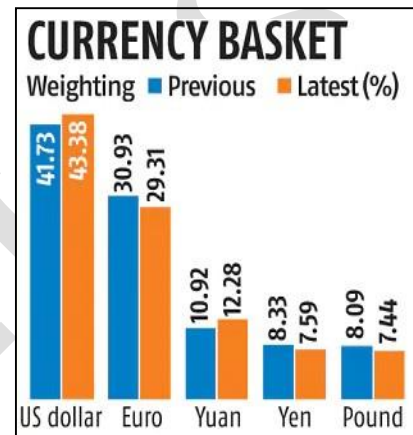
- Stepping up domestic production is the only way to contain the effects of 'importing' food inflation.

## Special Drawing Rights

**News:** Recently, the International Monetary Fund lifted the yuan's weighting in the Special Drawing Rights currency basket, prompting the Chinese central bank to pledge to push for a further opening of its financial markets.

### About:

- The SDR is neither a currency nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members. SDRs can be exchanged for these currencies.
- The SDR serves as the unit of account of the IMF and some other international organizations.
- The currency value of the SDR is determined by summing the values in US dollars, based on market exchange rates, of a SDR basket of currencies.
- The SDR basket of currencies includes the US dollar, Euro, Japanese yen, pound sterling and the Chinese renminbi (included in 2016).
- The SDR currency value is calculated daily (except on IMF holidays or whenever the IMF is closed for business) and the valuation basket is reviewed and adjusted every five years.



### Quota:

- It means the amount contributed to the IMF of a country is denominated in SDRs.
- Members voting power is related directly to their quotas.
- IMF makes the general SDR allocation to its members in proportion to their existing quotas in the IMF.
- Presently, India holds 2.75% of SDR quota, and 2.63% of votes in the IMF.
- India's foreign exchange reserves also incorporate SDR other than gold reserves, foreign currency assets and Reserve Tranche in the IMF.

## Total Factor Productivity

**News:** India's total factor productivity (TFP) growth has seen a moderate decline compared to the global experience, though it remains above that of emerging markets and developing economies, according to a recent report.

### About:

- Productivity levels measure the relationship between total products or output, and inputs or factors of production employed.
- Labour productivity is a measure of total output divided by the units of labour employed in the process of production.
- Total Factor Productivity (TFP) is a measure of total output divided by a weighted average of inputs i.e. labour and capital. Improvements in TFP brings down production costs, raise output levels, and lead to a higher gross domestic product.
- While total productivity measures all-inclusive productivity, TFP is a measure of production efficiency.

### India's performance:

- A recent Reserve Bank of India (RBI) report points to a moderate decline in TFP growth compared to the global experience.
- TFP growth rate for India during the 2010-2019 period was approximately 2.2%, as against -0.3% for emerging markets and developing economies.
- During the pandemic, the TFP for India declined by 2.9% in 2020 and marginally improved by 0.1% in 2021.



- In 2022, TFP growth rate is projected to increase to 2%.
- As per estimates, TFP growth contributed to 30% of India's GDP growth during 2010-2018. It was largely driven by public administration, quality education and social works.

### How can we improve TFP?

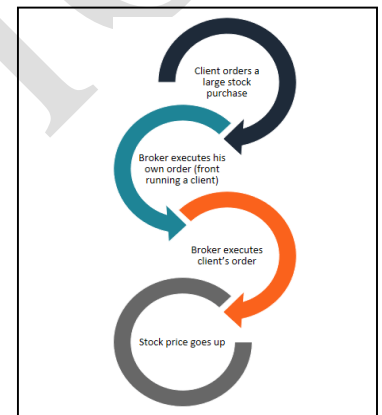
- India's initiatives around skill development and the new education policy are steps in the right direction, since they focus on boosting manpower employability.
- Quality education, better healthcare, nurturing of innovation, introduction of efficient technology and processes in domestic companies and reduction in misallocation of resources can help improve TFP levels.
- Though the country's ranking in the Global Innovation Index, 2021 has improved to 46, it still has some distance to go.

## Front-Running

**News:** Recently, there was a case of front-running in the mutual fund business.

### About:

- Front-running is a dubious market practice in which a dealer, trader or employee gets wind of a big order for buying or selling shares that will be placed by a fund or big investor and gets 'in front' of the trade.
- Large orders usually move a stock's price.
- By buying shares just before the big order hits the market and selling them once the price moves up, the front-runner pockets illegal gains from his advance knowledge.
- However, Front-running by insiders can adversely impact investors in a fund by bidding up the prices they get to buy stocks or hammering down the prices at which they get to sell.



### Are there any regulations made? What are actions proposed by SEBI?

- The SEBI (Prohibition of Fraudulent and Unfair Trade Practices Relating to Securities Market) Regulations, 2003 clearly define front-running and characterizes it as a fraudulent and unfair practice. SEBI has invoked this section many times to pass orders against front-runners.
- On the primary market front, the regulator is keen on enhancing disclosure and compliance requirement for listing of new-age technology companies.
- For the secondary market participants, it is keen on enhancing awareness around responsible investing as lot of new customers are going for speculative trading.

### What else needs to be done to prevent it?

- Surveillance mechanisms of stock exchanges are most useful to uncover instances of front-running.
- Surveillance software that tracks real-time trades in the market is well-equipped to spot similar trading patterns between big investors and individuals, which forms the basis for front-running investigations by the regulator.
- SEBI will also need to consider more stringent punishments for information carriers and front-runners when investigations find hard evidence of wrongdoing.

## Centre scraps import duties on crude sunflower and soybean oils

**News:** In a bid to cool inflation, the Centre allowed duty free import of 20 lakh tonnes each of crude soybean oil and crude sunflower oil for this year as well as 2023-24.

### About:

- More than half of India's edible oil consumption is imported
- India's dependence on edible oil imports is to the tune of 65%.
- Sunflower oil accounts for 14% of all edible oil imports
- India imports edible oils majorly from Ukraine and 20% from Russia (about 70%)

- India imports palm oil from Indonesia and Malaysia, while Soybean oil comes from Brazil and Argentina.
- In 2019, edible oils accounted for 40% of agriculture import bills and 3% of overall import bill of the country.
- Palm Oil (62%) > Soya oil (21%) > Sunflower oil (16%)

#### **What is inflation?**

- Inflation is defined as a situation where there is sustained, unchecked increase in the general price level and a fall in the purchasing power of money.
- The reason for price rise can be classified under two main heads which is Increase in Demand and Reduced supply.
- In India, inflation is primarily measured by two main indices - WPI and CPI.
- The CPI calculates the difference in the price of commodities and services such as food, medical care, education, electronics which Indian consumers buy for use.
- The goods or services sold by businesses to smaller businesses for selling further are captured by the WPI.
- In India, both WPI (Wholesale Price Index) and CPI (Consumer Price Index) are used to measure inflation.
- RBI through its Monetary Policy Committee Controls Inflation with its tools to control Money supply in the market.

#### **What is import duty?**

- It is a tax collected on imports and some exports by the customs authorities of the country.
- It is based on the value of goods that are imported.
- Import duty may also be referred to as tariff, import tax, customs duty and import tariff.
- The purpose of import duty is to raise income for local governments and to give market advantage to locally grown or produced goods that are not subject to import duties.

It is sometimes used as a tool to penalize a particular nation by charging high import duties on its products.

# Science & Technology

## GPS Aided GEO Augmented Navigation

**News:** Recently, Airports Authority of India (AAI) Successfully conducted a light trial using GAGAN GPS (Global Positioning System) Aided GEO Augmented Navigation based LPV (Localizer Performance with Vertical Guidance) Approach Procedures.

- Many airports including the ones under Regional Connectivity Scheme are being surveyed for the development of GAGAN-based LPV Instrument Approach Procedures.
- This is being done so that suitably equipped aircraft can derive maximum benefit in terms of improved safety during landing, reduction in delays, diversions and cancellations, reduction in fuel consumption.

### About LPV:

- LPV is a Satellite Based Procedure which has been used by aircraft for landing purposes.
- LPV approaches make aircraft possible to land at airports not equipped with expensive Instrument Landing Systems, which includes many small regional and local airports.
- Lowering the decision height up to 250 ft provides a substantial operational benefit in poor weather and low visibility conditions. Thus, any airport which hitherto would require higher visibility minima, will be able to accept aircraft benefiting remote airports which are devoid of precision approach capability equipment.

### What is GAGAN?

- It is a Space Based Augmentation System (SBAS) jointly developed by ISRO (Indian Space Research Organisation) and AAI to provide the best possible navigational services over Indian FIR (Flight Information Region) with the capability of expanding to neighboring FIRs.
- GAGAN is a system of satellites and ground stations that provide GPS signal corrections, giving you better position accuracy.
- It is the first such system developed for India and neighboring countries in the equatorial region.
- GAGAN System was certified by DGCA (Directorate General of Civil Aviation) in 2015 for Approach with Vertical Guidance (APV 1) and en-route (RNP 0.1) operations.
- There are only four Space-Based augmentation systems available in the world namely India (GAGAN), US (WAAS) Europe (EGNOS) and Japan (MSAS).

### Services offered by GAGAN:

- Aviation, Forest management, Railways signaling, Scientific Research for Atmospheric Studies, Natural Resource and Land Management, Location based services, Mobile, Tourism.

### Coverage area offered:

- GAGAN GEO footprint expands from Africa to Australia and GAGAN system has capability to cater 45 reference stations for expansion to neighboring countries.
- GAGAN provides a civil aeronautical navigation signal consistent with International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs) as established by the Global Navigation Satellite System (GNSS) Panel.

## Laser Communications Relay Demonstration (LCRD)

**News:** NASA recently demonstrated its Laser Communication Relay Demonstrator. It is the agency's first ever laser communications system. The LCRD will help the agency test optical communication in space.

### About:

- LCRD is a technology demonstration that will pave the way for future optical communications missions.
- The LCRD payload is hosted onboard the US Department of Defense's Space Test Program Satellite 6 (STPSat-6).
- It will be in a geosynchronous orbit, over 35,000km above Earth.

### **Benefits of Optical communications systems:**

- Optical communications systems are smaller in size, weight, and require less power compared with radio instruments.
- Smaller size gives more room for space instruments. Less weight eases cost on launch, less power means less drain on spacecraft batteries and optical communications will have unparalleled communication capabilities.
- Laser communication use different wavelength of light. It uses infrared light and has a shorter wavelength than radio waves. This helps the transmission of more data in a short time.

## **India Semiconductor Mission**

**News:** Recently, Ministry of Electronics & Information Technology has inaugurated the first ever Semicon India 2022 Conference under India Semiconductor Mission in Bengaluru.

### **What are semiconductors?**

- Semiconductors, sometimes referred to as integrated circuits (ICs) or microchips, are made from pure elements, typically silicon or germanium, or compounds such as gallium arsenide.
- Semiconductors are an essential component of electronic devices, enabling advances in communications, computing, healthcare, military systems, transportation, clean energy, and countless other applications.
- In a process called doping, small amounts of impurities are added to these pure elements, causing large changes in the conductivity of the material.

### **India Semiconductor Mission:**

- The ISM was launched in 2021 with a total financial outlay of Rs76,000 crore under the aegis of the Ministry of Electronics and IT (MeitY).
- It is part of the comprehensive program for the development of sustainable semiconductor and display ecosystem in the country.
- The programme aims to provide financial support to companies investing in semiconductors, display manufacturing and design ecosystem.
- Envisioned to be led by global experts in the Semiconductor and Display industry, ISM will serve as the nodal agency for efficient, coherent and smooth implementation of the schemes.

### **Components of the Scheme:**

- It provides fiscal support to eligible applicants for setting up of Semiconductor Fabs which is aimed at attracting large investments for setting up semiconductor wafer fabrication facilities in the country.
- It provides fiscal support to eligible applicants for setting up of Display Fabs which is aimed at attracting large investments for setting up TFT LCD / AMOLED based display fabrication facilities in the country.
- The Scheme provides a fiscal support of 30% of the Capital Expenditure to the eligible applicants for setting up of Compound Semiconductors / Silicon Photonics (SiPh) / Sensors (including MEMS) Fab and Semiconductor ATMP / OSAT (Outsourced Semiconductor Assembly and Test) facilities in India.
- It offers financial incentives, design infrastructure support across various stages of development and deployment of semiconductor design for Integrated Circuits (ICs), Chipsets, System on Chips (SoCs), Systems & IP Cores and semiconductor linked design.

### **Significance:**

- ISM is of paramount importance to organize efforts for promoting semiconductors and display industry in a more structured, focused, and comprehensive manner.
- It will facilitate the adoption of trusted electronics through secure semiconductors and display supply chains, including raw materials, specialty chemicals, gasses, and manufacturing equipment.
- It will enable a multi-fold growth of Indian semiconductor design industry by providing requisite support in the form of Electronic Design Automation (EDA) tools, foundry services and other suitable mechanisms for early-stage startups.
- It will also promote and facilitate indigenous Intellectual Property (IP) generation and encourage, enable and incentivize Transfer of Technologies (ToT).

- ISM will enable collaborations and partnership programs with national and international agencies, industries and institutions for catalyzing collaborative research, commercialization and skill development.

#### **Why does the industry matter?**

- Semiconductor is the heart of modern economics. Without them, there would be no smartphones, radios, TVs, laptops, computers and advance medical equipment.
- Fabrication of electronic devices is done through semiconductors.
- The emergence of e-vehicles shall help increase demand of semiconductors.
- They are used in solar technology, 3D printing machines, temperature sensors which are used in air conditioners are made with semiconductor devices.

#### **Way Forward:**

- India's own consumption of semiconductors is expected to cross USD 80 billion by 2026 and to USD 110 billion by 2030.
- The industry is dominated by the USA, Taiwan, Japan, South Korea, Netherlands. Thus, there are fewer countries in this segment. It might be a good idea for India to get on the bus early.

## **Air Independent Propulsion Technology**

**News:** Recently, France's Naval Group declined the bid for the P-75I Project, citing it does not use AIP (Air-Independent Propulsion) Technology yet.

#### **About:**

- AIP is a technology for conventional non-nuclear submarines.
- Submarines are essentially of two types: conventional and nuclear.
- The conventional submarines use diesel-electric engines, which require them to surface almost daily to get atmospheric oxygen for fuel combustion. If fitted with an AIP system, the submarine will need to take in oxygen only once a week.
- The indigenously developed AIP, which is one of the key missions of the Naval Materials Research Laboratory (NMRL - DRDO), is considered one of the ambitious projects of the DRDO (Defence Research and Development Organisation) for the Navy.

#### **What is Fuel Cell Based AIP system?**

- In a fuel cell based AIP, an electrolytic fuel cell releases energy by combining hydrogen and oxygen, with only water as the waste product ensuring less marine pollution. The cells are highly efficient, and do not have moving parts, thus ensuring that the submarine has a low acoustic emission of sound.

#### **How does AIP help?**

- AIP has a force multiplier effect on lethality of a diesel electric submarine as it enhances the submerged endurance of the boat several fold.
- Fuel cell-based AIP has merits in performance compared to other technologies.
- AIP technology allows a conventional submarine to remain submerged for much longer than ordinary diesel-electric submarines.
- All conventional submarines have to surface to run their generators that recharge the batteries that allow the boat to function under water. However, the more frequently a submarine surfaces, the higher the chances of it being detected. AIP allows a submarine to remain submerged for more than a fortnight, compared to two to three days for diesel-electric boats.

#### **Limitations of AIP:**

- Installing AIP increases the length and weight of the boats, requires pressurised liquid oxygen (LOX) storage on-board and supply for all three technologies.
- MESMA (Autonomous Submarine Energy Module) and the Stirling engine have some acoustic noise from moving parts; and the submarine's unit cost increases by around 10%.

## Open-RAN Architecture

**News:** The Ministry of Communications has signed a Memorandum of Understanding (MoU) with M/s VVDN Technologies Private Limited to facilitate registered startups, innovators and MSMEs working in the field of Open RAN (Radio Access Network) to get their product tested at the existing lab of M/s VVDN.

### About:

- Open-RAN is not a technology, but rather an ongoing shift in mobile network architecture that allows networks to be built using subcomponents from a variety of vendors.
- O-RAN has an open, multi-vendor architecture for deploying mobile networks, as opposed to the single-vendor proprietary architecture.
- O-RAN uses software to make hardware manufactured by different companies work together.
- The key concept of Open RAN is 'opening' the protocols and interfaces between the various subcomponents (radios, hardware and software) in the RAN.

### Radio Access Network

- It is the part of a telecommunications system that connects individual devices to other parts of a network through radio connections.
- A RAN resides between user equipment, such as a mobile phone, a computer or any remotely controlled machine, and provides the connection with its core network.
- Elements of RAN include Radio Unit (RU), Distributed Unit (DU) and Centralized Unit (CU).

### Advantages:

- An open environment expands the ecosystem, and with more vendors providing the building blocks, there is more innovation and more options for the Operators. They can also add new services.
- It will open new opportunities for Indian entities to enter into the network equipment market.
- The benefits of this approach also include increased network agility and flexibility, and cost savings. It's expected to make 5G more flexible and cost efficient.

## WHO reforms

**News:** Recently, the Prime Minister addressed the Second Global Covid Virtual Summit of the World Health Organisation (WHO), where he emphasized WHO Reforms.

### What are the reforms suggested by India?

- Strengthening the Public Health Emergency of International Concern (PHEIC) declaration process is the need of the hour. Emphasis must be on transparency and promptness in the declaration process.
- There is a need to ensure that extra budgetary or voluntary contributions are unearmarked to ensure that the WHO has the necessary flexibility for its usage in areas where they are required the most.
- There is no collaborative mechanism wherein the actual projects and activities are decided in consultation with member states, there is no review with respect to value for money and whether projects are being done as per the member states priorities or if there are abnormal delays. Establishing strong and robust financial accountability frameworks will enable maintaining integrity in financial flows.
- There is need for member states to have a greater say in the functioning of the WHO, given that it is the states which are responsible for implementation on ground of the technical advice and recommendations coming from the WHO.
- It has been felt that the TRIPS flexibilities provided for public health, under Doha Declaration, may not be sufficient to deal with crises such as Covid-19 pandemic. It is important to ensure fair, affordable, and equitable access to all tools (therapeutics, vaccines and diagnostics) for combating Covid-19 pandemic and, therefore, the need to build a framework for their allocation.
- Implementation of International Health Regulations (IHR) 2005 has highlighted critical gaps in the basic health infrastructure of member states. It is important that activities carried out by WHO, under its General Programme of Work, should focus on building and strengthening capacities in member states as required under IHR 2005, which are found lacking or deficient on the basis of the self-reporting on IHR 2005 done by the Member states.

- It is essential to create a Global framework for management of infectious diseases and pandemics. For this, there is need for enhancement of capacities of countries in preparation for and response to infectious diseases of pandemic potential, including guidance on effective public health and economic measures for health emergencies by leveraging a multidisciplinary approach which includes social science alongside health and natural sciences.

#### Need for WHO reforms:

- The growth and scope of the coronavirus disease (Covid-19) has prompted requests for increased international public health collaboration, both at the regional and global levels, especially reforming the WHO.
- WHO is not immune to global power-play. Powerful countries such as the US and China influence decision making.
- Only a quarter of its budget comes from contributions from UN member-states, and the real money to power its work is from voluntary funding by countries and organisations.
- WHO's institutional arrangements must be able to strongly push global cooperation in public health and support developing countries in real-time.
- Neither WHO nor any multilateral organisation is involved in drugs research.

## HS200 Solid Rocket Booster for Gaganyaan Mission

**News:** Recently, the Indian Space Research Organization (ISRO) has completed the static test of the human-rated solid rocket booster (HS200) for Gaganyaan programme.

#### About:

- The booster engine is part of the Geosynchronous Satellite Launch Vehicle MkIII (GSLV Mk III) rocket that will carry Indian astronauts to space.
- It is the world's second largest operational booster using solid propellants.
- The HS200 is the human-rated version of the S200 rocket booster of satellite launch vehicle GSLV Mk III, popularly known as LVM3.

#### Gaganyaan Mission:

- The mission is expected to be launched in 2023.
- Three flights will be sent into orbit. Of these, two will be unmanned flights and one human spaceflight.
- The Orbital Module will have three Indian astronauts, including a woman. It will circle Earth at a low-earth-orbit at an altitude of 300-400 km from earth for 5-7 days.
- With this launch, India will become the fourth nation in the world to launch a human spaceflight mission after the USA, Russia and China.
- The objective of the Gaganyaan programme is to demonstrate the capability to send humans to low earth orbit on board an Indian launch vehicle and bring them back to earth safely.



## Voyager Mission

**News:** NASA's Voyager 1 is continuing its journey beyond our Solar System, 45 years after it was launched. But now the veteran spacecraft is sending back strange data, puzzling its engineers. A glitch is said to be behind this.

#### About:

- Launched in the 1970's, and the probes sent by NASA were only meant to explore the outer planets – but they just kept on going.
- The mission objective of the Voyager Interstellar Mission (VIM) is to extend the NASA exploration of the solar system beyond the neighborhood of the outer planets to the outer limits of the Sun's sphere of influence, and possibly beyond.

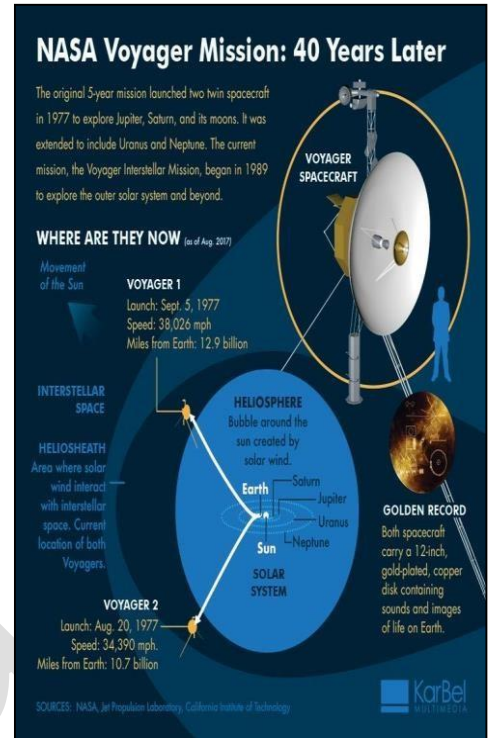
- The Voyager spacecraft are the third and fourth human spacecraft to fly beyond all the planets in our solar system. Pioneers 10 and 11 preceded Voyager in outstripping the gravitational attraction of the Sun but on February 17, 1998, Voyager 1 passed Pioneer 10 to become the most distant human-made object in space.

### What has it achieved?

- Voyager 2 is the only probe ever to study Neptune and Uranus during planetary flybys.
- It is second man-made object to leave our Solar System.
- Voyager 2 is the only spacecraft to have achieved the feat of visiting all four gas giant planets – Neptune, Saturn, Jupiter and Uranus.
- It has discovered around 16 moons, as well as phenomenon like Neptune’s transient Great Dark spot, the cracks in Europa’s ice shell, and ring features at every planet.

### Terms to know from Prelims Perspective:

- **Heliosphere** - The heliosphere is a bubble around the sun created by the outward flow of the solar wind from the sun and the opposing inward flow of the interstellar wind. The heliosphere is the region influenced by the dynamic properties of the sun that are carried in the solar wind—such as magnetic fields, energetic particles and solar wind plasma. The heliopause marks the end of the heliosphere and the beginning of interstellar space.
- **Interstellar Space** - Scientists use the heliopause to mark where interstellar space begins, although depending on how you define our solar system it can stretch all the way to the Oort Cloud, which begins 1,000 times farther away from the sun than Earth’s orbit.



## Wild Poliovirus

**News:** Mozambique has identified its first case of wild poliovirus Type 1 this week after a child contracted this disease.

- It is country’s first such case since 1992 and the second imported case of wild poliovirus in Southern Africa this year.
- As of today, wild poliovirus is endemic only in Afghanistan and Pakistan.

### About:

- The WHO defines polio or poliomyelitis as ‘a highly infectious viral disease, which mainly affects young children’
- The virus is transmitted by person-to-person, spread mainly through the faecal-oral route or, less frequently, by a common vehicle (contaminated water or food) and multiplies in the intestine, from where it can invade the nervous system and can cause paralysis.

### When can a country be declared polio free?

- There are three types of variants of the polio-virus, numbered 1 to 3.
- For a country to be declared polio-free, the wild transmission of all three kinds has to be stopped.
- For eradication, cases of both wild and vaccine derived polio infection have to be reduced to zero.
- India was declared polio-free in January 2014, after three years of zero cases, an achievement that is widely believed to have been spurred by the successful Pulse Polio campaign.

**What is polio**

- Poliomyelitis (polio) is a highly infectious viral disease, mainly affecting children
- According to WHO, the virus is transmitted from person-to-person, mainly through the faecal-oral route

**STRAINS**

- There are three types of polio virus strains — P1, P2 and P3
- P2 was eradicated globally in 1999
- India attained a polio free status in 2014 after successfully eliminating the wild P1 and P3 strains

**VACCINATION SCHEDULE**

- OPV: At 6 weeks, 10 weeks and 14 weeks
- IPV: At 6 weeks and 14 weeks
- OPV booster: Between 16 and 24 months

## AstroSat

**News:** India’s Astrosat space telescope has witnessed the birth of a black hole in space for the 500<sup>th</sup> time.



## About:

- It is India's first multi-wavelength space telescope, which has 5 telescopes seeing through different wavelengths simultaneously – visible, near UV, far UV, soft X-ray and hard X-ray.
- Onboard the AstroSat is a 38-cm wide UltraViolet Imaging Telescope (UVIT), which is capable of imaging in far and near-ultraviolet bands over a wide field of view.
- AstroSat was launched on 28 September 2015 by ISRO into a near-Earth equatorial orbit.
- It is a multi-institute collaborative project, involving IUCAA, ISRO, Tata Institute of Fundamental Research (Mumbai), Indian Institute of Astrophysics (Bengaluru), and Physical Research Laboratory (Ahmedabad), among others.
- It has been studying Gamma-Ray Bursts (GRB).



## What is a Black Hole?

- It is a place in space where gravity is so strong that even light cannot escape its pull.
- According to NASA, the gravity in black holes is so strong because matter has been squeezed into a tiny space. This can happen when a star is dying.

## What are Gamma-Ray bursts?

- GRBs are immensely energetic explosions that have been observed in distant galaxies.
- They are the brightest and most energetic electromagnetic events known to occur in the universe.
- GRBs shine hundreds of times brighter than a typical supernova and about a million trillion times as bright as the Sun.
- When a GRB erupts, it is briefly the brightest source of cosmic gamma-ray photons in the observable Universe.

## Green Hydrogen

**News:** At the World Economic Forum in Davos, Switzerland, Minister of Petroleum and Natural Gas Hardeep Singh Puri said India will emerge as the leader of green hydrogen by taking advantage of the current energy crisis across the globe.

## About:

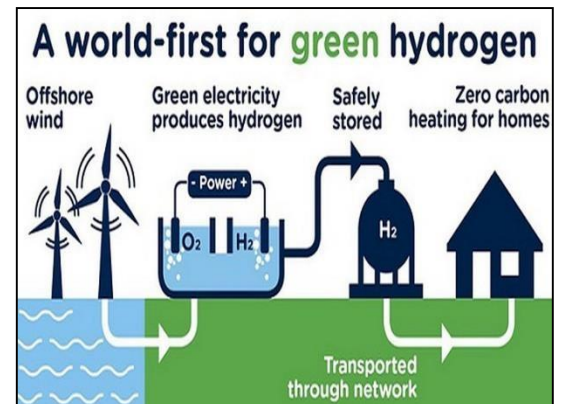
- The 'green' depends on how the electricity is generated to obtain the hydrogen, which does not emit greenhouse gas when burned.
- Green hydrogen is produced through electrolysis using renewable sources of energy such as solar, wind or hydel power.

## Initiatives taken in India:

- In April, Oil India Limited (OIL) commissioned India's first 99.99% pure green hydrogen plant in eastern Assam's Jorhat.
- India has just begun to generate green hydrogen with the objective of raising non-fossil energy capacity to 500 gigawatts by 2030.
- The National Hydrogen Mission was launched on August 15, 2021, with a view to cutting down carbon emissions and increasing the use of renewable sources of energy.

## Hydrogen can be 'grey' and 'blue' too:

- Grey hydrogen is generated through fossil fuels such as coal and gas and currently accounts for 95% of the total production in South Asia.



- Blue hydrogen, too, is produced using electricity generated by burning fossil fuels but with technologies to prevent the carbon released in the process from entering the atmosphere.

## Param Porul Super Computer

**News:** PARAM PORUL, a state-of-the-art Supercomputer was inaugurated at NIT Tiruchirappalli recently. It has been established under Phase 2 of the National Supercomputing Mission (NSM).

### About NSM:

- It is being implemented and steered jointly by the Department of Science and Technology (DST) and Department of Electronics and Information Technology (DeitY).
- Centre for Development of Advanced Computing (C-DAC) is entrusted with overall design, development, deployment, and commissioning of computers build under this mission.

### Focus of Mission:

- The Mission envisages empowering national academic and R&D institutions spread over the country by installing a vast supercomputing grid comprising of more than 70 high-performance computing facilities.
- These supercomputers will also be networked on the National Supercomputing grid over the National Knowledge Network (NKN). The NKN is another programme of the government which connects academic institutions and R&D labs over a high speed network.
- The Mission includes development of highly professional High Performance Computing (HPC) aware human resource for meeting challenges of development of these applications.

Name	Speed	Location
PARAM Shivay	833 TF	IIT BHU Varanasi
PARAM Shakti	1.66 PF	IIT Kharagpur
PARAM Brahma	797 TF	IISER Pune
PARAM Sangamak	1.66 PF	IIT Kanpur
PARAM Seva	833 TF	IIT-H
PARAM Yukti	833 TF	JNCASR
PARAM Smriti	833 TF	NABI Mohali
PARAM Utkarsh	833 TF	C-DAC B
PARAM Sidhi	5.26 PF	National AI Facility CDAC-Pune
PARAM Pravega	3.3 PF	IISC
PARAM Ganga	1.66 PF	IIT Roorkee
<b>Total</b>	<b>18.5 PF</b>	

### Supercomputers built under NSM scheme is used in following large scale applications:

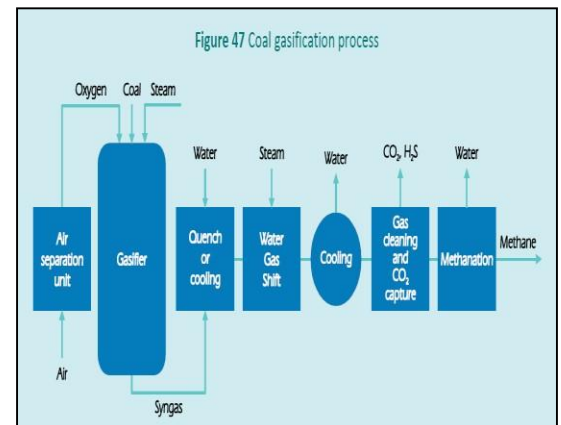
- National Supercomputing Mission platform for Genomics and Drug Discovery
- Urban Modelling – Science based decision support framework to Address Urban environment issues (Meteorology, Hydrology, Air Quality)
- Flood Early Warning and Prediction system for River basins of India
- HPC software suite for Seismic Imaging to aid Oil and Gas exploration
- MPPLAB: Telecom Network Optimization

## Coal Gasification

**News:** The Ministry of Coal has prepared a National Mission document to achieve 100 MT (Million Tonnes) Coal Gasification by 2030.

### About:

- Coal gasification is a process in which coal is partially oxidised with air, oxygen, steam or carbon dioxide to form a fuel gas.
- This gas is then used instead of piped natural gas, methane and others for deriving energy.
- In-situ gasification of coal – or Underground Coal Gasification (UCG) – is the technique of converting coal into gas while it is still in the seam and then extracting it through wells.
- It produces Syngas which is a mixture consisting primarily of methane (CH<sub>4</sub>), carbon monoxide (CO), hydrogen (H<sub>2</sub>), carbon dioxide (CO<sub>2</sub>) and water vapour (H<sub>2</sub>O). Syngas can be used to produce a wide range of fertilizers, fuels, solvent and synthetic materials.



### **Significance of Coal Gasification:**

- Steel companies typically use coking coal in their manufacturing process. Most of the coking coal is imported and is expensive. To cut costs, plants can use syngas, which comes from coal gasification plants in the place of coking coal.
- It is primarily used for electricity generation, to produce chemical feedstocks.
- The hydrogen obtained from coal gasification can be used for various purposes such as making ammonia, powering a Hydrogen Economy.
- India's hydrogen demand is likely to increase to 11.7 million tonnes by 2030 from 6.7 million tonnes per year as of now. Refineries and fertiliser plants are the largest consumers of hydrogen now, which is being produced from natural gas. It can be produced through coal in the processes during coal gasification.

### **Concerns associated with Coal Gasification:**

- Coal gasification actually produces more carbon dioxide than a conventional coal-powered thermal power plant. According to CSE estimates, one unit of electricity generated by burning gasified coal generates 2.5 times more carbon dioxide than what would result when burning the coal directly.
- The syngas process converts a relatively high-quality energy source (coal) to a lower quality state (gas) and consumes a lot of energy in doing so. Thus, the efficiency of conversion is also low.

## **West Nile Virus**

**News:** The Kerala health department is on alert after the death of a 47-year-old from Thrissur due to the West Nile Virus. The virus was first reported in the state in Alappuzha in 2006 and then in Ernakulam in 2011.

### **About:**

- The West Nile Virus is a mosquito-borne, single-stranded RNA virus.
- It is 'a member of the flavivirus genus and belongs to the Japanese Encephalitis antigenic complex of the family Flaviviridae'.
- Culex species of mosquito's act as the principal vectors for transmission.
- It is transmitted by infected mosquitoes between and among humans and animals, including birds, which are the reservoir host of the virus.
- WNV can also spread through blood transfusion, from an infected mother to her child, or through exposure to the virus in laboratories.

### **Symptoms:**

- The disease is asymptomatic in 80% of the infected people.
- In rest of the 20% cases, the symptoms include fever, headache, fatigue, body aches, nausea, rash, and swollen glands.

### **Preventive Measures:**

- This vector-borne disease can be prevented by protecting one-self from mosquito bites.
- Other steps are wearing clothing that acts as a barrier to exposure to bites, reducing breeding sites, covering water storage containers and eliminating puddles and drainage of places where water accumulates.

# Environment & Bio-diversity

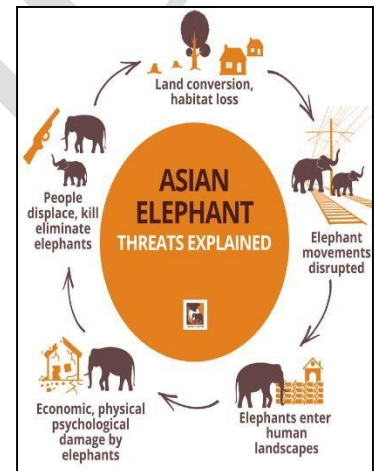
## Project Elephant

**News:** The Ministry of Environment, Forest and Climate Change launched a Field Manual for Managing Human-Elephant Conflicts (HEC) in India to guide forest staffers dealing with HEC in major elephant range states.

- The manual has been prepared by the ministry, along with the Wildlife Institute of India (WWI) and World Wide Fund for Nature (WWF India).
- It contains the detailed best practices of minimizing human-elephant conflict. It is drafted with the aim of providing forest officials/ departments and other stakeholders with guidance towards interventions to help mitigate Human Elephant Conflict, both in emergencies and when conflict poses a recurring challenge.

### About:

- Elephants in India
  - India is home to approximately around 27,000 Asian Elephants, which is the world's largest population of the species.
  - As per Elephant Census (2017), Karnataka has the highest number of elephants (6,049), followed by Assam (5,719) and Kerala (3,054).
- Asian Elephants
  - There are three subspecies of Asian elephant which are the Indian, Sumatran and Sri Lankan.
  - The Indian subspecies has the widest range and accounts for most of the remaining elephants on the continent.
  - The elephant herd is led by the oldest and largest female member (known as the matriarch). This herd includes the daughters of the matriarch and their offspring.
  - Elephants have the longest-known gestational (pregnancy) period of all mammals, lasting up to 680 days (22 months).
  - Females between 14 - 45 years may give birth to calves approximately every four years with the mean interbirth intervals increasing to five years by age 52 and six years by age 60.
- Protection Status
  - IUCN Red List – Endangered
  - Wildlife Protection Act, 1972 – Schedule I
  - CITES – Appendix I



### Conservation Efforts:

- Plans and programmes to arrest their poachers and killers.
- Declaration and establishment of various elephant reserves across the states. For example, Mysuru and Dandeli elephant reserves in Karnataka.
- Cleaning areas from lantana and eupatorium (invasive species) as they prevent the growth of grass for elephants to feed on.
- Making corridors for safe movement of elephants in order to prevent Human-Elephant conflict. Recently, the Supreme Court (SC) upheld the 2011 order of the Madras High Court (HC) on the Nilgiris elephant corridor, affirming the right of passage of the animals and the closure of resorts in the area.
- Gaj Yatra which is a nationwide awareness campaign to celebrate elephants and highlights the necessity of securing elephant corridors.
- The Monitoring the Illegal Killing of Elephants (MIKE) programme, launched in 2003, is an international collaboration that tracks trends in information related to the illegal killing of elephants from across Africa and Asia, to monitor effectiveness of field conservation efforts.
- Project Elephant was launched as centrally sponsored scheme. The Ministry of Environment, Forest and Climate Change provides financial and technical support to major elephant range states in the country through the project.

# State of World's Forest 2022

**News:** Recently, the State of the World's Forests 2022 (SOFO 2022) was released by the United Nations Food and Agriculture Organization (FAO).

## About:

- The report is published bi-annually and is widely regarded as one of the most important stock takes on forest ecosystems.
- The 2022 edition of SOFO explores the potential of three forest pathways for achieving green recovery and tackling multidimensional planetary crises, including climate change and biodiversity loss.
  - Halting deforestation and maintaining forests
  - Restoring degraded lands and expanding agroforestry
  - Sustainably using forests and building green value chains

## Highlights of Report:

- **Loss of Forests**
  - The 420 million hectares (mha) of forests have been lost between 1990 and 2020, due to deforestation, though forests cover 4.06 billion ha of the earth's geographical area.
  - Although the rate of deforestation was declining, 10 mha of forests were lost every year between 2015 and 2020.
  - An estimated 289 mha of forests would be deforested between 2016 and 2050 in the tropics alone, resulting in the emission of 169 GtCO<sub>2</sub>e if additional action is not taken.
  - The greenhouse gas total is expressed in terms of billions of tonnes of global annual CO<sub>2</sub> equivalent emissions (GtCO<sub>2</sub>e/year).
- **Rise in infectious disease**
  - 15% of 250 emerging infectious diseases have been linked to forests.
  - Example: Covid-19, Drug-resistant infections (Antimicrobials), Zika Virus, etc.
  - 30% of new diseases, reported since 1960, can be attributed to deforestation and land-use-change.
- **Rise in Poverty**
  - The cost of global strategies to prevent pandemics based on reducing the illegal wildlife trade, avoiding land-use change and increasing surveillance was estimated to be USD22 billion to USD31 billion.
  - Approximately 124 million more people fell into extreme poverty after Covid-19 and this may have longer-term impacts on wood-based fuel (such as firewood, charcoal) due to increase in wood-based fuel use in some countries during the pandemic.
- **Consumption of Natural Resources**
  - The world population is projected to reach 9.7 billion people by 2050, which will increase competition for land, as the demand for food for this large population will rise by 35 to 56% by the 2050s.
  - The annual global consumption of all natural resources combined is expected to more than double from 92 billion tonnes in 2017 to 190 billion tonnes in 2060 due to increases in population size and affluence.
- **GDP dependence on Forests**
  - It is estimated that more than half of world Gross Domestic Product (GDP) depends moderately or highly on ecosystem services, including those provided by forests.
  - Ecosystem services make human life possible by, for example, providing nutritious food and clean water, regulating disease and climate, supporting the pollination of crops and soil formation, and providing recreational, cultural and spiritual benefits.

## Recommendations given:

- Forest protection, such as stopping illegal wildlife trade and avoiding land-use change, can help prevent the next pandemic, and the cost is a fraction of the damages that an actual pandemic would cause. Agroforestry holds special potential for boosting biodiversity, food security and even crop production.
- A massive uptick in funding will require, specifically, a three-fold increase by 2030. Establishing and maintaining forests, for example, may cost USD 203 billion every year by 2050.

- Supporting local producer organizations and protecting land tenure rights are also crucial for allowing small communities and Indigenous groups to continue sustainably managing their forests. For this, governments can give smallholders long-term rights to their tree products, which would help de-risk agroforestry, as well as formalize the recognition of customary land rights.

## State of World's Birds Report

**News:** The State of the World's Birds, an annual review of environmental resources has revealed that the population of 48% of the 10,994 surviving species of birds is declining.

- The report is published by the Manchester Metropolitan University.
- It gives an overview of the changes in the knowledge of avian biodiversity and the extent to which it is imperilled.
- The study draws from BirdLife International's latest assessment of all birds for the International Union for Conservation of Nature's Red List.

### Key Findings:

- The threat has been attributed to almost half of the 10,994 recognised extant species of birds to the expanding human footprint on the natural world and climate change.
- While 4,295 or 39% of the species have stable trends, about 7% or 778 species have increasing population trends.
- It shows 1,481 or 13.5% species are currently threatened with global extinction.
- The more threatened bird species (86.4%) are found in tropical than in temperate latitudes (31.7%).
- Such hotspots are concentrated in the tropical Andes, southeast Brazil, eastern Himalayas, eastern Madagascar, and Southeast Asian islands.

### Threats:

- Degradation and loss of natural habitats as well as direct overexploitation of many species are the key threats to avian biodiversity. The use of 37% of the surviving bird species as common or exotic pets and 14% as food are examples of direct overexploitation.
- Also, humans eat 14% of the world's surviving species of birds.
- Apart from tropical forests, the threat of natural grasslands has been particularly worrying for North America, Europe and India.
- The other factors are habitat fragmentation, degradation, hunting and trapping.

### Recommendations:

- Conducting reliable estimates of population abundance and change.
- Novel and more effective solutions applied at scale for demand reduction for over harvested wild birds.
- Monitoring green energy transitions that can impact birds if inappropriately implemented
- Eradication of populations of invasive alien species.
- Shifting human societies to economically sustainable development pathways.

## Tissue Culture Plants

**News:** The Agricultural and Processed Food Products Export Development Authority (APEDA) recently conducted a webinar on 'Export Promotion of Tissue Culture Plants such as Foliage, Live Plants, Cut Flowers, and Planting Material'.

### About Plant Tissue Culture:

- It is the production of new plants from a small piece of plant tissue or cells removed from the growing tips of a plant in a suitable growth medium.
- In this process the growth medium or culture solution is very important as it is used for growing plant tissue because it contains various plant nutrients in the form of 'jelly' known as agar and plant hormones which are necessary for the growth of plants.

### **Where can it be put to use?**

- To study the various plant diseases and work out methods for their elimination.
- Single cell clones are useful for genetic, morphological and pathological studies.
- Embryonic cell suspensions can be used for large scale clonal propagation.
- To study the respiration and metabolism of plants.
- Mutant cells can be selected from cultures and used for crop improvement.
- Immature embryos can be cultured in vitro to produce hybrids, a process referred to as embryo rescue.

### **Advantages:**

- Quickly produce mature plants.
- Allows them to be moved with greatly reduced chances of transmitting diseases, pests, and pathogens.
- Storage of genetic plant material to safeguard native plant species.

### **Issues faced by Tissue culture plant laboratories:**

- Increasing power costs.
- Low efficiency levels of the skilled workforce in the laboratories.
- Contamination issues in the laboratories.
- Cost of transportation of micro-propagated planting material.
- Lack of harmonization in the HS code of Indian planting material with other nations.
- Objections raised by the forest and quarantine departments to the export of live planting material.

### **Efforts made by Government to encourage exports:**

- APEDA is running a Financial Assistance Scheme (FAS) to help laboratories upgrade themselves so as to produce export quality tissue culture planting material.
- It also facilitates exports of tissue culture planting material to diversified countries through market development, market analysis and promotion and exhibition of tissue culture plants at international exhibitions and by participating in buyer-seller meets at different international forums.

## **Green Manure**

**News:** The Punjab agriculture department is promoting the cultivation of green manure these days.

### **About:**

- Green manures are crops grown specifically for maintaining soil fertility and structure.
- It is done by leaving uprooted or sown crops parts, allowing them to wither onto the field and serve as mulch and soil fertilizers.
- They are normally incorporated back into the soil, either directly, or after removal and composting.
- Three main varieties of Green Manure are Dhaincha, Cowpea and Sunhemp.
- Green manure must be leguminous in nature
- They must bear maximum nodules on its roots to fix large amount of atmospheric nitrogen in the soil

### **Why Punjab needs Green Manure?**

- Punjab's per hectare fertilizer consumption is one of the highest in the country and is also higher than national average
- Switching to Green Manure can curtail this consumption to a large extent and can save huge input costs for farmers
- High intensity agricultural practices is prevalent in Punjab which requires lot of chemical fertilizers. This in-turn also leads to deficiencies of micronutrients like Iron and Zinc, affecting crop productivity.
- In such scenarios, Green Manure is a viable alternative which not just improves soil health but also enhances crop productivity.

### **How does it help soil and crop?**

- Increases organic matter in the soil
- Decomposes rapidly and liberates large quantity of Carbon Dioxide and weak acids, which act on insoluble soil minerals to release nutrients for plant growth.

- They naturally suppress weed growth, hence preferred by farmers.
- Soil erosion is prevented with improved stability of the top-soil. This helps to improve the overall soil structure by providing porosity and aeration in the soil.

#### **Limitations of Green Manure:**

- Excessive use of Green manure may cause over-fixation of nitrogen and phosphorous into the land making it toxic and further leading to nutrient pollution.
- Costly for farmers
- Farmers won't be able to plant their marketable cash crop during the manure phase as sometimes they may choose to increase land fertility rather than plant crops.
- The green manure crop may sometimes compete with the crops that will be the primary source of income.

## **Shallow and Deep Ecologism**

**News:** Recent effects of climate change (Heatwaves, droughts etc.) have brought into focus two strands of environmental philosophy that reinvent the relationship between nature and humans-shallow and deep ecologism.

- The concepts emerged in the 1970s, when Norwegian philosopher Arne Næss sought to look beyond the popular pollution and conservation movements of his milieu to address environmental degradation.
- In his study of ecological concerns, Næss is more preoccupied with the role of the individual in nature. He believes that owing to increased anthropocentrism, humans have cut themselves off from nature, viewing nature and themselves as competing entities and establishing a master-slave dynamic.
- By placing humans at the heart of the environmental crisis, Næss outlines the difference between the two styles of ecologism.

#### **What is Shallow Ecologism?**

- The powerful and fashionable fight against pollution and resource depletion is shallow ecologism or environmentalism. Exponents of this philosophy believe in continuing our present lifestyle, but with specific tweaks aimed at minimising the damage to the environment.
- It may include the use of vehicles that cause less pollution or air conditioners that do not release chlorofluorocarbons (CFCs).

#### **What is Deep Ecologism?**

- It believes Humans should radically change their relationship with nature. It aims to sustain nature by making large-scale changes to our lifestyle.
- It may include limiting the commercial farming of meat to preserve forest areas and reduce the artificial fattening of animals, or reshaping of transport systems which involve the use of internal combustion engines.

#### **What can be done to promote Deep Ecologism?**

- **Socialism**
  - Deep ecologism in particular belongs to socialism.
  - In his writings on deep ecologism, Næss argues that a narrow focus on pollution and conservation movements is counterproductive. He believes that when projects are only implemented to solve pollution, it generates evils of a different kind.
  - For instance, the installation of pollution control devices may increase the cost of living, leading to an increase in class difference.
  - An ethically responsible ecologism is one which operates in the interest of all economic classes.
- **Considering Local Interests**
  - The environment may also become more vulnerable when decisions are strongly influenced by majority rules, without taking local interests into consideration.
  - Decentralization of decision making process can help in this case. For example, hierarchy can be minimized. Chain of decision making must involve local board, a nation-wide institution and a global institution.
  - A lengthy decision making chain is unfavourable as it may exclude local interests.
- **Acknowledge Regional Differences**
  - Næss cautions humans against adopting a 'vague, global' approach to the environmental crisis.



- A holistic perspective to the crisis is one which acknowledges regional differences and the disparities between developed and underdeveloped nations.
- Næss stresses that the political potential of the movement be realised, and that those in positions of power be held accountable. The responsibility of solving the climate crisis falls on policy-makers as much as it does on scientists and ecologists.

## Global Food Policy Report: IFPRI

**News:** Recently, the International Food Policy Research Institute (IFPRI) has released Global Food Policy Report: Climate Change & Food Systems, showing India's risk for hunger could increase 23% by 2030 due to Climate Change.

### Key Findings:

- India's food production could drop 16% and the number of those at risk for hunger could increase 23% by 2030 due to climate change.
- The number of Indians at risk from hunger in 2030 is expected to be 73.9 million in 2030 and, if the effects of climate change were to be factored in, it would increase to 90.6 million.
- The aggregate food production index would, under similar conditions, drop from 1.6 to 1.5. Food production index covers food crops that are considered edible and that contain nutrients. Coffee and tea are excluded because, although edible, they have no nutritive value.
- On a positive note, climate change will not impact the average calorie consumption of Indians and this is projected to remain roughly the same at 2,600 kcal per capita per day by 2030 even in a climate change scenario.
- The average temperature across India is projected to rise by between 2.4°C and 4.4°C by 2100. Similarly, summer heat waves are projected to triple by 2100 in India.

### How food production impacts Climate Change?

- Food system activities, including producing food, transporting it, and storing wasted food in landfills, produce Greenhouse Gas (GHG) Emissions that contribute to climate change. Of these sources, Livestock production is the largest, accounting for an estimated 14.5 % of global GHG emissions from human activities.
- If global trends in meat and dairy intake continue, our chances of staying below the 2° Celsius threshold will still be extremely slim.
- This is why urgent and dramatic reductions in meat and dairy consumption, alongside reductions in GHG emissions from energy use, transportation, and other sources, are crucial to avoiding catastrophic climate change.
- The responsibility for eating lower on the food chain falls most heavily on countries like the U.S. with the highest per capita consumption of meat and dairy. Changing diets on an international scale will require more than just educating consumers – national policies will need to shift in ways that support more plant-centric diets.

### Recommendations of Global Food Policy Report:

- There must be improved management of land and water resources. Policy should ensure there are no “undesirable trade-offs” in development goals, finding a balance between the additional energy required to increase productivity while not contributing further to fossil fuel emissions.
- Healthy diets and sustainable methods of food production need to be prioritized. It is advisable to reduce consumption of highly processed foods and red meats to improve food ecological footprint.
- Social protection program must be introduced that protect the rural poor engaged in agricultural activity from the effects of climate change.
- Value chains need to be made more efficient and support ‘free and open’ trade, which the report calls ‘an integral part of climate-smart agricultural and food policies.’

There is need to increase investment in research and development for ‘disruptive technology’ innovations, such as irrigation systems and the cold chain, which could ‘accelerate sustainable food systems transformation.’

## 'Pollution and Health' Report

**News:** According to a recent report 'Pollution and Health: A progress Update', published in The Lancet Planetary Health, Air Pollution was responsible for 16.7 lakh deaths in India in 2019, or 17.8% of all deaths.

### Highlights:

- Of the 16.7 lakh deaths, around 9.8 lakh deaths were caused by PM 2.5 Pollution, and another 6.1 lakh by household air pollution.
- Although the number of deaths from pollution sources associated with extreme poverty (such as indoor air pollution and water pollution) has decreased, these reductions are offset by increased deaths attributable to industrial pollution (such as ambient air pollution and chemical pollution).
- Air pollution is the most severe in the Indo-Gangetic Plain.
- Burning of biomass in households was the single largest cause of air pollution deaths in India, followed by coal combustion and crop burning.
- The number of deaths remains high despite India's considerable efforts against household air pollution, including through the Pradhan Mantri Ujjwala Yojana programme.
- Despite a National Clean Air Programme, a Commission for Air Quality Management in the National Capital Region, India does not have a strong centralised administrative system to drive its air pollution control efforts and consequently improvements in overall air quality have been limited and uneven.

### Recommendations:

- Inclusion of modern pollution prevention in multilateral development institutions' country strategy frameworks.
- International organisations and national governments need to continue expanding the focus on pollution as one of the triumvirate of global environmental issues, alongside climate change and biodiversity.
- Affected countries must focus resources on addressing air pollution, lead pollution, and chemical pollution, which are the key issues in modern pollution.
- A massive rapid transition to wind and solar energy will reduce ambient air pollution in addition to slowing down climate change.
- All sectors need to integrate pollution control into plans to address other key threats such as climate, biodiversity, food, and agriculture. All sectors need to support a stronger stand on pollution in planetary health, One Health, and energy transition work.

### Government initiatives to contain Air pollution:

- Graded Response Action Plan
- Polluter Pay Principle
- Smog Tower
- Tallest Air Purifier
- BS-VI vehicles
- National Clean Air Program (NCAP)
- Air Quality and Weather Forecasting and Research (SAFAR)
- Pradhan Mantri Ujjwala Yojana

## National Policy on Biofuels

**News:** The Union Cabinet recently approved amendments to the National Policy on Biofuels, 2018.

### Key Amendments approved:

- **Feedstocks**
  - The government will allow more feedstocks for the production of biofuels.
- **Revised Ethanol Blending Target**
  - Instead of 2030, the Centre plans to move ahead with its ethanol blending target of 20% of petrol containing ethanol by 2025-26.

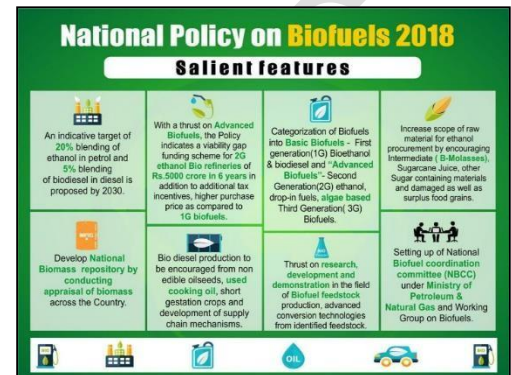
- It will promote the production of biofuels in the country, under the Make in India program, by units located in Special Economic Zones (SEZ)/ Export Oriented Units (EoUs).
- **Export of Biofuels**
  - Permission will be granted for the export of biofuels in specific cases.
- The government has allowed the addition of new members to the National Biofuel Coordination Committee (NBCC)

### How will the amendments help?

- They are expected to attract and foster developments of indigenous technologies which will pave the way for the Make in India drive and thereby generate more employment.
- The proposed amendments are expected to pave the way for the Make in India drive which will help reduce dependence on import of petroleum products through generation of more and more biofuels.
- Since many more feedstocks are being allowed for the production of biofuels, this will promote the Atmanirbhar Bharat and give an impetus to the Prime Minister's vision of India becoming 'energy independent' by 2047.

### Related initiatives:

- **Ethanol Blended Petrol (EBP) Programme** – Seeks to achieve blending of ethanol with a view to reducing pollution, conserving foreign exchange and increase value addition in the sugar industry enabling them to clear cane price arrears of farmers.
- **Pradhan Mantri JI-VAN Yojana, 2019** – To create an ecosystem for setting up commercial projects and to boost research and development in 2G Ethanol sector.
- **GOBAR (Galvanizing Organic Bio-Agro Resources) DHAN Scheme** – It focuses on managing and converting cattle dung and solid waste in farms to useful compost, biogas and Bio-CNG. It not only keeps the villages clean but also helps increase the income of rural households.
- **Repurpose Used Cooking Oil (RUCO)** – Launched by FSSAI, it aims for an ecosystem that will enable the collection and conversion of used cooking oil to biodiesel.



## Seoul Forest Declaration

**News:** Recently, the Seoul Declaration was adopted at the XV World Forestry Congress, held in Seoul, South Korea.

### Key Highlights of Declaration:

- Responsibility for forests should be shared and integrated across institutions, sectors and stakeholders.
- Investment in forest and landscape restoration globally needs to triple by 2030 to meet internationally agreed commitments and targets on restoring degraded land.
- One of the key takeaways from Congress was the importance of moving towards a circular bio-economy and climate neutrality. The Declaration called for innovative green financing mechanisms to upscale investment in forest conservation, restoration and sustainable use, and highlighted the potential of sustainably produced wood as a renewable, recyclable and versatile material.
- Healthy, productive forests must also be maintained to reduce the risk of future pandemics and to provide other essential benefits for human physical and mental health.
- The Declaration urged the continued development and use of emerging innovative technologies and mechanisms to enable evidence-based forest and landscape decision-making.

### Other Highlights of the XV World Forestry Congress:

- Assuring the Future of Forests with Integrated Risk Management (AFFIRM) Mechanism
  - AFFIRM aims to develop integrated risk management plans to use as examples for other countries to follow, creating a methodology that will enable countries to better conduct disturbance risk assessments and provide an improved understanding of forest hazards and forest-related risks.
- Sustaining an Abundance of Forest Ecosystems (SAFE) Initiative

- The Platform for REDD+ Capacity Building
  - REDD+ is a framework created by the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP) to guide activities in the forest sector that reduces emissions from deforestation and forest degradation, as well as the sustainable management of forests and the conservation and enhancement of forest carbon stocks in developing countries.

## Fostering Effective Energy Transition 2022

**News:** World Economic Forum has released a report named Fostering Effective Energy Transition 2022, which urges urgent action from both private and public sectors to ensure a resilient energy transition.

### Key Findings:

- The energy transition is not in tandem with growing climate urgency. Recent disruptions from a post-pandemic surge in energy demand, fuel supply bottlenecks, inflationary pressures and disruption in energy supply chains owing to the war in Ukraine have made the transition more difficult.
- High energy prices, risks of energy supply shortages, and soaring demand for fossil fuels are simultaneously challenging energy affordability, energy security and access, and sustainability.
- The lack of access to an affordable energy supply has emerged as a key threat to a just transition.
- Industrial activity generates more than 30% of anthropogenic emissions, yet many industries face considerable challenges to decarbonize.

### Recommendations:

- More countries need to make binding climate commitments, create long-term visions for domestic and regional energy systems, attract private sector investors for de-carbonisation projects and help consumers and the workforce adjust.
- There is need for holistic approach that delivers concurrently on the three transition imperatives – energy affordability, availability, and sustainability – at an accelerated pace.
- Regulatory frameworks need to be strengthened to drive the necessary actions and investments. Anchoring climate commitments into legally binding frameworks would not only ensure that those commitments endure political cycles, but also provide enforcement mechanisms to keep the long-term implementation efforts on track.
- Supply-side interventions will need to be augmented with demand-side efficiencies. Current energy market volatility and security constraints provide an opportunity to supercharge the transition by boosting demand for clean energy and fostering more efficient energy consumption from both industrial and end consumers.
- Clean demand signals could be the necessary turning point to scale the projects and investments required for the development of low-emission industries.

### World Economic Forum

#### About:

- The WEF is a Swiss non-profit foundation established in 1971, based in Geneva Switzerland.
- It is committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas.

#### Major reports published:

- Energy Transition Index
- Global Competitiveness Report
- Global IT Report
- Global Gender Gap Report
- Global Risk Report
- Global Travel and Tourism Report

## E-Waste Management

**News:** The Ministry of Environment, Forest and Climate Change has released the Draft notification for Electronic Waste Management for public feedback.

### About:

- **Electronic Goods Covered**
  - A wide range of electronic goods, including laptops, landline and mobile phones, cameras, recorders, music systems, microwaves, refrigerators and medical equipment have been specified in the notification.
- **E-waste collection target**
  - Consumer goods companies and makers of electronics goods have to ensure at least 60% of their electronic waste is collected and recycled by 2023 with targets to increase them to 70% and 80% in 2024 and 2025, respectively.
  - Companies will have to register on an online portal and specify their annual production and e-waste collection targets.
- **EPR Certificates**
  - The rules bring into effect a system of trading in certificates, akin to carbon credits, that will allow companies to temporarily bridge shortfalls.
  - The rules lay out a system of companies securing Extended Producer Responsibility (EPR) certificates.
  - These certificates certify the quantity of e-waste collected and recycled in a particular year by a company and an organization may sell surplus quantities to another company to help it meet its obligations.
- **Penalty**
  - Companies that don't meet their annual targets will have to pay a fine or an 'environmental compensation' but the draft doesn't specify the amount of fines.
- **Role of State Governments**
  - The state governments are required to earmark industrial spaces for e-waste dismantling and recycling facilities, undertaking industrial skill development and establishing measures for protecting the health and safety of workers engaged in these facilities.

### Challenges concerning E-waste management:

- Less involvement of people – Consumers themselves are not involved as they are reluctant to give away their electronic devices for recycling purposes.
- No incentives and dearth of guidelines – There are no clear guidelines for the unorganized sector to handle E-waste.
- Child Labor – In India, about 4.5 lakh child laborers in the age group of 10-14 are observed to be engaged in various e-activities and without much safeguards and protection.
- Health Hazard – E-waste contain over 1000 toxic materials, which contaminate soil and groundwater.
- Reluctance of authorities involved – Lack of coordination between various authorities responsible for e-waste management and disposal including the non-involvement of municipalities.
- Security implications – End of life computers often contain sensitive personal information and bank account details which when not deleted leave opportunity for fraud.

# Security & Disaster Management

## International Conference on Disaster Resilient Infrastructure

**News:** Recently, the Prime Minister addressed the inaugural session of the fourth edition of the International Conference on Disaster Resilient Infrastructure via video message.

### Coalition for Disaster Resilient Infrastructure (CDRI)

- CDRI is a multi-stakeholder global partnership of national governments, UN (United Nations) agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions.
- PM Modi launched it during his speech at the UN Climate Action Summit in 2019.
- It aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development.
- So far its members include 30 countries and 8 Organisations. The CDRI secretariat is based in New Delhi, India.

### Significance for India:

- It provides platform for India to emerge as a global leader on Climate Action and Disaster Resilience.
- CDRI boosts India's soft power, but more importantly it has wider connotation than just economics, as synergy between disaster risk reduction, Sustainable Development Goals (SDGs) and Climate Accord provides for sustainable and inclusive growth.
- Complement the International Solar Alliance (ISA).
- Facilitate India's support to resilient infrastructure in Africa, Asia, etc.
- Provide access to knowledge, technology, and capacity development for infra developers.
- Create opportunities for Indian infrastructure & technology firms to expand services abroad.

### What is the difference between Disaster Resilient Infrastructure (DRI) from Climate Resilient Infrastructure?

- DRI also includes addressing disaster risk due to geophysical and geomorphological hazards such as earthquakes, landslides, tsunami and volcanic activity. Since infrastructure systems are built for long life cycles, it is imperative that DRI addresses risks emanating from such low-frequency high impact events.
- DRI must deal with technological hazards like nuclear radiation, dam failures, chemical spills, explosions which are not directly linked to climate.
- More than 90% of disasters are a manifestation of weather and climate-related extreme events. So, making infrastructure climate-resilient also contributes to making it disaster resilient.
- Some CRI efforts may focus on reducing carbon footprint of Infrastructure. While this may be a byproduct of DRI, DRI does not explicitly address these aspects.

## Pangong Tso

**News:** India is closely monitoring the construction of a bridge by China on the Pangong Tso (lake) in eastern Ladakh.

### About:

- Pangong Tso literally translates into a "conclave lake". Pangong means conclave in Ladakhi and Tso means lake in Tibetan language.
- Situated at over 14,000 feet, the Lake is about 135 km long.
- It is formed from Tethys geosyncline.
- The Karakoram Mountain range, which crosses Tajikistan, Afghanistan, Pakistan, China and India, with heights of over 6,000 meters including K2, the world's second highest peak, ends at the north bank of Pangong Tso.
- Its southern bank too has high broken mountains sloping towards Spangur Lake in the south.

- The lake's water, while crystal clear, is brackish, making it undrinkable.

### What is the issue?

- On the north bank, there is a PLA garrison at Kurnak fort and on the south bank at Moldo, and the distance between the two is around 200 km.
- The new bridge between the closest points on two banks, which is around 500 m, will bring down the movement time between the two sectors from around 12 hours to three or four hours.
- This will significantly bring down the time for the People's Liberation Army (PLA) to move troops and equipment between the two sectors.
- The bridge is located around 25 km ahead of the Line of Actual Control (LAC).



### Why do we see a dispute here?

- The Line of Actual Control (LAC) – the line that separates Indian and Chinese troops since 1962 – generally runs along the land except for the width of Pangong Tso. Here, it runs through water.
- Both sides have marked their areas announcing which side belongs to which country.
- India controls about 45 km stretch of the Pangong Tso and China the rest.

### What do we understand by Finger Points?

- The lake has mountain spurs of the Chang Chenmo range jutting down, referred to as fingers.
- There are eight of them in contention here. India and China have different understanding of where the LAC passes through.
- India has maintained that the LAC passes through Finger 8, which has been the site of the final military post of China.
- India has been patrolling the area – mostly on foot because of the nature of the terrain – up to Finger 8. But Indian forces have not had active control beyond Finger 4.
- China, on the other hand, says the LAC passes through Finger 2. It has been patrolling up to Finger 4 – mostly in light vehicles, and at times up to Finger 2.

### Why is China adamant to encroach area alongside Pangong Tso?

- Pangong Tso is strategically crucial as it is very close to Chusul Valley, which was one of the battlefronts between India and China during the 1962 war.
- China appears to keep India constricted in the region by taking strategic advantage of looking over the Chusul Valley, which it can do if it advances along Pangong Tso.
- China also does not want India to boost its infrastructure anywhere near the LAC. China fears it threatens its occupation of Aksai Chin and Lhasa-Kashgar highway.
- Any threat to this highway also puts Chinese rather imperialist plans in Pakistan-occupied territories in Ladakh and Jammu and Kashmir, and beyond in Pakistan.

## National Investigation Agency and Unlawful Activities (Prevention) Act

**News:** Special court on May 25 sentenced Yasin Malik to life imprisonment in a terror funding case.

The National Investigation Agency (NIA) court charged him to life term under Section 17 of the Unlawful Activities (Prevention) Act (UAPA) and Section 121 of the Indian Penal Code (IPC) and also imposed a fine of ₹10 lakh.

### About NIA:

- It was constituted under the National Investigation Agency (NIA) Act, 2008. The Ministry of Home Affairs (MHA) reviews the manpower, financial and infrastructure requirements of NIA from time to time.
- It implements international treaties, agreements, conventions and resolutions of the United Nations, its agencies and other international organizations.
- Its objective is to combat terror in India. It acts as the Central Counter-Terrorism Law Enforcement Agency.

### **How does the NIA work?**

- The cases are assigned to the NIA by the Central Government in accordance with section VI of the NIA Act, 2008.
- The investigation of the cases is done by the Agency independently; cases are then placed before the NIA Special Court.
- For prosecuting the accused under the Unlawful Activities (Prevention) Act, 1967 (UAPA) and certain other scheduled offenses, the Agency seeks the sanction of the Central Government. The sanction is granted under the UAPA based on the report of the 'Authority' constituted under section 45 (2) of the UAPA.
- The amendments to the NIA Act has brought the offences related to the smuggling in High-Quality Counterfeit Indian Currency under the definition of a terrorist Act.
- To curb various aspects of terrorist financing, a Terror Funding and Fake Currency Cell (TFFC) has been created in the NIA.
- The Central Government for the trial of Scheduled Offenses, constitutes one or more Special Courts under Section 11 and 22 of the NIA Act 2008.
- The Special Court shall be presided over by a judge to be appointed by the Central Government on the recommendation of the Chief Justice of the High Court.

### **What offences does NIA investigate and prosecute?**

- Affecting the sovereignty, security and integrity of India
- Security of State
- Friendly relations with foreign States.
- Against atomic and nuclear facilities.
- Smuggling in High-Quality Counterfeit Indian Currency.

### **About UAPA:**

- Passed in 1967, the law aims at effective prevention of unlawful activities associations in India.
- The Act assigns absolute power to the central government, by way of which if the Centre deems an activity as unlawful then it may, by way of an Official Gazette, declare it so.
- It has death penalty and life imprisonment as highest punishments.
- Both Indian and foreign nationals can be charged under UAPA.
- It will be applicable to the offenders in the same manner, even if crime is committed on a foreign land, outside India.
- Under the UAPA, the investigating agency can file a charge sheet in maximum 180 days after the arrests and the duration can be extended further after intimating the court.

### **What has changed under UAPA post 2019 amendment?**

- The Act empowers the Director General of National Investigation Agency (NIA) to grant approval of seizure or attachment of property when the case is investigated by the said agency.
- The Act empowers the officers of the NIA, of the rank of Inspector or above, to investigate cases of terrorism in addition to those conducted by the DSP or ACP or above rank officer in the state.
- It also included the provision of designating an individual as a terrorist.



# General Studies – 4

## Ethics, Integrity & Aptitude

1. Ethics and Human Interface: Essence, determinants and consequences of Ethics in-human actions; dimensions of ethics; ethics - in private and public relationships. Human Values - lessons from the lives and teachings of great leaders, reformers and administrators; role of family society and educational institutions in inculcating values.
2. Attitude: content, structure, function; its influence and relation with thought and behaviour; moral and political attitudes; social influence and persuasion.
3. Aptitude and foundational values for Civil Service, integrity, impartiality and non-partisanship, objectivity, dedication to public service, empathy, tolerance and compassion towards the weaker-sections.
4. Emotional intelligence-concepts, and their utilities and application in administration and governance.
5. Contributions of moral thinkers and philosophers from India and world.
6. Public/Civil service values and Ethics in Public administration: Status and problems; ethical concerns and dilemmas in government and private institutions; laws, rules, regulations and conscience as sources of ethical guidance; accountability and ethical governance; strengthening of ethical and moral values in governance; ethical issues in international relations and funding; corporate governance.
7. Probity in Governance: Concept of public service; Philosophical basis of governance and probity; Information sharing and transparency in government, Right to Information, Codes of Ethics, Codes of Conduct, Citizen's Charters, Work culture, Quality of service delivery, Utilization of public funds, challenges of corruption.
8. Case Studies on above issues

## Corruption vs Call of Duty

### Case Study

You are District Magistrate of a flood-prone district. The flood control department has allocated forty crore rupees for building embankments in the low lying area of the river bed. There have been various complaints from locals over the delay in project completion, violations of rules and misuse of funds by the nexus of politicians and contractors.

During monsoon, the embankment construction couldn't withstand a single season of flooding. This has led to the submergence of many villages in floodwater and thousands of people are trapped in the villages. The villages are completely cut off and there is a scarcity of food and drinking water. Due to water stagnation, there is also a risk of epidemic spread in the region.

There is huge discontent and protest over the allegation of corruption against the local politician. As he is a popular face of ruling political party in the state, there is severe pressure from political heads to cover the corruption issue. Defying the orders of political bosses will bring wrath towards you and may also lead to transfer.

1. As a District Magistrate what will be your course of action to manage the situation in the district. (200 words)
2. Identify the various dimensions of the crisis involved in the issue. Based on your understanding, suggest measures to deal with the crisis. (200 words)

# Short News for Prelims

## Sloth Bear

**News:** Recently, two sloth bears were rescued by forest officials from a village in Jharkhand by the People for Animals group.

### About:

- Sloth bears are found in Sri Lanka, India, Bhutan and Nepal, predominantly in lowland areas.
- They primarily eat termites and ants, and unlike other bear species, they routinely carry their cubs on their backs.
- They are also very fond of honey, hence their alternative name of "honey bear".
- Sloth bears do not hibernate.



### Protection Status:

- IUCN Red List - Vulnerable
- CITES - Appendix I
- Indian Wildlife Protection Act, 1972 - Schedule I

**Scientific Name:** Melursus Ursinus

## Shigella Bacteria Outbreak

**News:** An outbreak of shigella bacteria is believed to be the reason behind the recent incident of suspected food poisoning in Kasaragod district, Kerala.

### About:

- Shigella is a genus of bacteria that causes an infection called shigellosis. It is the second leading cause of diarrhea (after Rotavirus) worldwide and the third leading cause of death in children less than 5 years old.
- Symptoms include diarrhoea, fever, stomach cramps which can last for seven days.

- Shigella is generally transmitted through contaminated food or water, or through person-to-person contact. Shigellosis is primarily a disease of poor and crowded communities that do not have adequate sanitation or safe water.
- Currently there are no vaccines available for shigellosis.
- The incubation period of Shigellosis is typically 1-4 days.

### How can we prevent it?

- The most important thing is to maintain hydration and electrolyte balance.
- Antibiotics are recommended for reducing illness duration and for preventing transmission.
- Handwashing is said to reduce shigella transmission by 70%.

## Anang Tal Lake

**News:** Union Minister of State for Culture and Parliamentary Affairs Arjun Ram Meghwal on Wednesday said that he would ask the Delhi Development Authority (DDA) to restore Anang Tal, a historic mini lake in Mehrauli, created by Tomar King Anang Pal.

### About:

- The lake was created in 1052 AD by the founder king of Delhi Maharaja Anang Pal Tomar. The millennium old lake signifies the beginning of Delhi.
- Anang Tal has a strong Rajasthan connection as Maharaja Anang Pal is known as nana (maternal grandfather) of Prithviraj Chauhan whose fort Rai Pithora is on the list of ASI.
- These monuments have turned into a garbage dump today. National Monuments Authority (NMA) has been trying for the last two years to bring back the glory of pre-Islamic monuments destroyed by foreign invaders.

- There is still some water left in Anang Tal but gradually the mini lake has shrunk over time. Until the water body is declared a protected monument, it will not survive.

## Transnistria



### About:

- Transnistria is a tiny breakaway region of Moldova. It lies between Moldova to its west and Ukraine towards its east.
- It now risks being dragged into the Russia-Ukraine war because of reports of a series of explosions in its territory.
- Often described as a “remnant of the Soviet Union”, Transnistria declared independence like Moldova did soon after the break-up of the Soviet Union.
- Transnistria is not recognised as independent even by Russia and its economy is dependent on Russia for subsidies and free gas. Most Transnistrians have dual citizenship of Russia and Transnistria or triple citizenship of Moldova, Transnistria, and Russia.

## ISRO mission to Venus

**News:** After sending missions to the Moon and Mars, the ISRO is now readying a spacecraft to orbit Venus to study what lies below the surface of the solar system’s hottest planet, and also unravel the mysteries under the Sulfuric Acid clouds enveloping it. ISRO is planning to launch the mission in December 2024.

### Earlier mission to Venus:

- Magellan – A Nasa mission that ended in 1994.
- Venus Express– A European mission- focused on atmospheric science.
- Akatsuki– Japanese spacecraft- focused on atmospheric science.

## NASA’s two new missions to Venus:

- Davinci+ (Deep atmosphere Venus Investigation of Noble Gases, Chemistry, and Imaging) mission will Measure the planet’s atmosphere to gain insight into how it formed and evolved. Determine whether Venus ever had an ocean. Return the first high resolution images of the planet’s ‘tesserae’ geological features.
- Veritas (Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy) – This mission will map the planet’s surface to understand its geological history and investigate how it developed so differently than Earth. It will use a form of radar to chart surface elevations and discover whether volcanoes and earthquakes are still happening.

### About Venus:

- Venus is the second planet from the sun and the hottest planet in the solar system with a surface temperature of 500C – high enough to melt lead.
- A single Venusian rotation takes 243.0226 Earth days. That means a day lasts longer than a year on Venus, which makes a complete orbit around the sun in 225 Earth days.
- Venus is one of just two planets that rotate from east to west. Only Venus and Uranus have this “backwards” rotation.
- The Venusian planetary core has a diameter of about 4,360 miles (7,000 km), comparable to Earth’s core.

## Unique Disability ID Scheme

**News:** Recently, the Ministry of Social Justice and Empowerment has asked states to speed up implementation of the Unique Disability ID (UDID) scheme for Persons with Disabilities (PwD) in the 75 districts.

### About:

- The scheme is being implemented with a view of creating a National Database for PwDs, and to issue a Unique Disability Identity Card to each person with disabilities.
- The objective is to help PwDs obtain the UDID card to avail schemes and benefits provided by government through its different departments.

**Importance:**

- The scheme will encourage transparency, efficiency and ease of delivering the government benefits to persons with disabilities.
- The project helps in stream-lining the tracking of physical and financial progress of beneficiaries at all levels of hierarchy of implementation – from village level, block level, District level, State level and National level.

## Haflong Hindi

**News:** Some linguists feel pushing the standardised Hindi as a compulsory subject in school could affect Haflong Hindi speaking communities in the state.

**About:**

- Haflong Hindi is the bridge language of Dima Hasao district of Assam. It stemmed from Hindi and includes vocabulary from several other languages, such as Assamese, Bengali, Dimasa and Zeme Naga.
- It is named after Haflong, which is the headquarters of Dima Hasao district.
- Haflong Hindi follows the Tibeto-Burman grammar, not the Hindi grammar, and has lexical additions from Nepali and Bengali.
- It has a generic plural marker and does not use numbers as in Hindi.

## Grey Slender Loris

**News:** Recently, scientists from the Salim Ali Centre for Ornithology and Natural History (SACON) in Coimbatore carried out a survey of Grey slender loris populations in Tamil Nadu's Dindigul forest division.

**About:**

- The Grey slender loris belongs to the family Loridae. It is a species of primate.
- It has got a lean and lanky appearance, with longer and slender limbs, larger ears, pointed snout and eyes circled with black or dark brown.
- The fur is soft and woolly. The colour varies from dark grey to earthy brown.
- The Grey slender loris is a nocturnal animal. It is also a slow-moving animal.

**Habitat:**

- They are found in tropical rainforests, scrub forests, semi-deciduous forests, and swamps.
- Grey Slender Loris generally inhabits dry and drought-prone areas of Dindigul district of Tamil Nadu.
- They are found in southern and eastern India (Andhra Pradesh, Karnataka, Kerala and Tamil Nadu)

**Protection Status:**

- IUCN – Near Threatened
- CITES – Appendix II
- Wildlife (Protection) Act of India, 1972 – Schedule I



## Monkeypox

**News:** Health authorities in the United Kingdom have confirmed a case of monkeypox, a rare viral infection similar to smallpox, in an individual who recently travelled to that country from Nigeria.

**About:**

- The monkeypox virus is an orthopoxvirus, which is a genus of viruses that also includes the variola virus, which causes smallpox, and vaccinia virus, which was used in the smallpox vaccine.
- Monkeypox causes symptoms similar to smallpox, although they are less severe.

**Zoonotic Disease**

- Monkeypox is a zoonosis, that is, a disease that is transmitted from infected animals to humans.
- According to the WHO, cases occur close to tropical rainforests inhabited by animals that carry the virus.
- Monkeypox virus infection has been detected in squirrels, Gambian poached rats, dormice, and some species of monkeys.

**Is human-to-human transmission possible?**

- Human-to-human transmission is, however, limited — the longest documented chain of transmission is six generations, meaning the last person to be infected in this chain was six

links away from the original sick person, the WHO says.

### Symptoms and Treatment

- Monkeypox begins with a fever, headache, muscle aches, back ache, and exhaustion. It also causes the lymph nodes to swell (lymphadenopathy), which smallpox does not. The WHO underlines that it is important to not confuse monkeypox with chickenpox, measles, bacterial skin infections, scabies, syphilis and medication-associated allergies.
- The incubation period (time from infection to symptoms) for monkeypox is usually 7-14 days but can range from 5-21 days.
- The incubation period (time from infection to symptoms) for monkeypox is usually 7-14 days but can range from 5-21 days.
- There is no safe, proven treatment for monkeypox yet. The WHO recommends supportive treatment depending on the symptoms. Awareness is important for prevention and control of the infection.

### World Food Prize 2022

**News:** World Food Prize foundation announced the name of World Food Prize laureate 2022, Dr. Cynthia Rosenzweig of the United States.

- Rosenzweig was selected for the award for her research to understand the relationship between climate and food systems and forecast how both will change in the future.
- In 2021 Leading nutrition expert Dr. Shakuntala Haraksingh Thilsted won the prize and in 2020 Indian-American soil scientist - Dr. Rattan Lal won the prize.

#### About:

- The World Food Prize is the foremost international honor recognizing the achievements of individuals who have advanced human development by improving the quality, quantity or availability of food in the world.
- It is an annual award that recognizes contributions in any field involved in the world food supply including plant, animal and soil science; food science and technology; nutrition, rural development, etc.

- It is open to any individual without regard to race, religion, nationality or political beliefs.
- In addition to the cash award of USD 2,50,000, the laureate receives a sculpture designed by the noted artist and designer, Saul Bass.

### Bonded Manufacturing Scheme

#### About:

- To support the "Make in India" program, the CBIC launched the Bonded Manufacturing Scheme under the Customs Act, 1962. Under this programme, a manufacturing unit can import goods (both inputs and capital goods) under Customs duty deferment with no interest liability.
- The scheme has no investment threshold and export obligations.
- The duties are fully remitted if the goods resulting from such manufacturing operations done in bonded warehouses are exported.
- The import duty is payable only in the event where the finished goods or the imported goods are cleared in the domestic market (ex-bonding).
- The onboarding to the bonded manufacturing programme is fully digital and the microsite for the same is available on 'Invest India' portal.

### Integrated Battle Groups (IBGs)

**News:** The Army has identified a holding formation on the Western front and a Strike formation on the Northern borders to be converted into agile Integrated Battle Groups (IBG).

#### About:

- IBGs are brigade-sized, agile, self-sufficient combat formations, which can swiftly launch strikes against adversary in case of hostilities.
- Each IBG would be tailor-made based on Threat, Terrain and Task and resources will be allotted based on the three Ts.
- They need to be light so they will be low on logistics and they will be able to mobilise within 12-48 hrs based on the location.

While a Command is the largest static formation of the Army spread across a defined geography, a Corps is the largest mobile formation. Typically, each Corps

has about three Divisions. The idea is to reorganise them into IBGs which are Brigade sized units but have all the essential elements like infantry, armoured, artillery and air defence embedded together.

## National Technology Day

**News:** The Prime Minister expressed his “gratitude” towards the scientists and their “efforts” that led to the “successful Pokhran tests in 1998” on National Technology Day (11th May).

### About:

- The day, which was first observed on 11th May, 1999, aims to commemorate the scientific and technological achievements of Indian scientists, engineers. The day was named by the former Prime Minister Atal Bihari Vajpayee.
- The theme of Year 2022 is: “Integrated Approach in Science and Technology for a Sustainable Future”.

### Importance:

- On May 11, 1998, India detonated three nuclear bombs in the Indian Army’s Pokhran Test Range.
- Dr APJ Abdul Kalam lead the Indian team of scientists to successfully test-fire the Shakti-1 nuclear missile at Rajasthan’s Pokhran test range.
- Two days later, the country successfully tested two more nuclear weapons as a part of the same Pokhran-II/Operation Shakti initiative. After these tests Prime Minister Atal Bihari Vajpayee declared India a nuclear state, making it the sixth country to join the ‘nuclear club’ of nations.
- Hansa 3, India’s first indigenous aircraft was first tested on the same day in 1998 in Bangalore.
- Successful test firing of Trishul, a short range missile made in India, was also done on the same day.

### Technology Development Board India:

- On the occasion of National Technology Day, TDB hosts scientific technology based webinars and felicitate individuals for excellent works in the field of Science and Technology every year.
- Established in 1996, TDB is a statutory body that works under the Department of Science and Technology, GOI.

- It also provides financial assistance for concerns of Indian industries and other agencies for commercialization of indigenized technologies or adoption of imported technologies for wider domestic applications.

## Gallantry Awards

**News:** Recently, President conferred 13 Shaurya Chakras, including six posthumous, to the personnel of Armed Forces during Defence Investiture Ceremony (Phase-1).

### About:

- Post-Independence, first three gallantry awards namely Param Vir Chakra, Maha Vir Chakra and Vir Chakra were instituted by the government of India on 26th January, 1950 which were deemed to have effect from 15th August, 1947.
- Eligibility - All officers of all ranks of the Army, Navy and the Air Force or of any of the reserve forces, territorial army and any other lawfully constituted armed forces.
- In addition to the above-mentioned personnel, matrons, sisters, nurses, alongside the staff of the nursing services and other services pertaining to hospitals and nursing and civilians, both male and females, serving regularly or temporarily under the orders, directions or supervision of any of the above-mentioned forces.

### What are Wartime Highest Gallantry Awards?

- Param Vir Chakra – Highest military decoration
- Maha Vir Chakra – Second highest gallantry award
- Vir Chakra – Third highest war-time gallantry award

### What are Peacetime Highest Gallantry Awards?

- Ashoka Chakra – Highest military award during peacetime for valor, courageous action or sacrifice
- Kirti Chakra – Second highest peacetime gallantry award
- Shaurya Chakra – Awarded to personnel of armed forces for instances of extraordinary gallantry

## Amrit Sarovar Mission

### About:

- The objective of the Mission Amrit Sarovar is “construction/development” of at least 75 ponds in every district of the country.
- As part of the initiative, each of the ponds will have a pondage area of minimum 1 acre (0.4 hectares) with water holding capacity of about 10,000 cubic metres.
- All rural districts have been directed to develop at least 75 ponds, totalling about 50,000 Amrit Sarovars across the country.
- The scheme also mentions that if the district is unable to create as many new Amrit Sarovars, they may take up rejuvenation of the existing ponds for restoring their ecological and productive utility.
- India’s first “Amrit Sarovar” was inaugurated at Patwai, Rampur in Uttar Pradesh.

## Great Indian Bustards

**News:** The Supreme Court of India had directed the governments of Rajasthan and Gujarat to ensure installation of bird-diverters on power lines before July 20, 2022. The move is aimed at protecting the Great Indian Bustard (GIB), the state bird of Rajasthan, and the lesser floricans in the area.

### About:

- IUCN Status – Critically Endangered
- Listed in Schedule I of the Indian Wildlife (Protection) Act, 1972
- Appendix I of CITES
- Identified as one of the species for the recovery programme under the Integrated Development of Wildlife Habitats of the Ministry of Environment and Forests.
- Only 2 districts in Rajasthan (Jaisalmer and Barmer) have a breeding GIB population in the wild.
- The bird can also be found in small numbers in Gujarat, MP, Karnataka, Maharashtra and Andhra Pradesh

### Project GIB

- In state of Rajasthan it involves identifying and fencing off bustard breeding grounds in existing protected areas as well as provide secure breeding enclosures in areas outside protected areas.

### Protected Areas

- Desert National Park Sanctuary – Rajasthan

- Rollapadu Wildlife Sanctuary – Andhra Pradesh
- Karera Wildlife Sanctuary – Madhya Pradesh



## Amalthea

**News:** According to recent findings, Amalthea appears to radiate out more heat than it receives from the sun, which NASA suggests may be due to Jupiter’s magnetic field or from tidal stresses.

- Amalthea is tidally locked to Jupiter in synchronous rotation-it always aligns with the planet along its long axis.

### About:

- The moon Amalthea is one of Jupiter’s 53 named satellites, it was the first to be discovered after the four Galilean moons, and it is the fifth-largest overall.
- Amalthea also contributes to one of the Gossamer Rings of Jupiter-the Amalthea Gossamer Ring-which is the faint innermost Gossamer ring of the planet. The Gossamer Rings are outside the main Jovian ring.
- Only two missions have visited Amalthea: Voyager and Galileo. Both the Voyager 1 and Voyager 2 spacecraft photographed the Jovian moon during their flybys in 1979.

## Bharat Tap Initiative

**News:** Recently, the Minister for Housing and Urban Affairs launched the BHARAT TAP initiative at the ‘Plumbex India’ exhibition. This exhibition is aimed at products and services related to the plumbing, water, and sanitation industry.

### About:

- It is a concept to use low flow tap and fixtures.
- It will provide low-flow, sanitary-ware at scale, and thereby reduce water consumption at the source considerably.

- It is estimated to save approximately 40% of water.
- This will in turn result in water saving and energy saving due to less water and energy will be required for pumping, transporting, and purification.

## Thomas Cup

**News:** Indian Badminton takes a Giant leap. From the Semi-final spot in 1979 to Top of the World in 2022.

### About:

- The Thomas Cup, sometimes called the World Men's Team Championships, is an international Badminton Competition among teams representing member nations of the Badminton World Federation (BWF), the sport's global governing body.
- The Thomas Cup Competition was the idea of Sir George Alan Thomas, a highly successful English Badminton player of the early 1900s, who was inspired by Tennis's Davis Cup, and football's World Cup first held in 1930.

### About India's performance:

- Dishing out a performance for the ages, India's men's badminton lifted the Thomas Cup title with a commanding 3-0 win over powerhouse Indonesia, a historic triumph that will enhance country's status in the sport.
- World Championships medallist Lakshya Sen, Kidambi Srikanth and doubles players Chirag Shetty and Satwiksairaj Rankireddy delivered when it mattered the most as they stunned the 14-time champions with a dominant show.

## Devasahayam Pillai

**News:** Devasahayam was recommended for the process of Beatification by the Vatican in 2004.

- With the completion of the process, Devasahayam pillai, who took the name "Lazarus" after embracing Christianity in 1745, on May 15th became first Indian layman to be declared a saint by Pope Francis

during an impressive canonization ceremony at the Vatican.

### About:

- Devasahayam was born on April 23, 1712, as Neelakanta Pillai into a Hindu Nair family, at Nattalam in Kanyakumari district, which was part of the erstwhile Travancore kingdom.
- He was an official in the court of Travancore's Maharaja Marthanda Varma when he was instructed into the Catholic faith by a Dutch naval commander.
- 'Lazarus' or 'Devasahayam' in Malayalam, translates to 'God is my help'.

## Kanheri Caves

**News:** Various amenities were inaugurated at ancient Kanheri Caves on the occasion of Buddha Purnima.



### About:

- They are located in the forests of the Sanjay Gandhi National park
- Belong to the Hinayana phase of Buddhist architecture. However, additions were made when Mahayana Buddhism was gaining ground. Example, 5<sup>th</sup> Century image of Buddha.
- The earliest reference of the caves is ascribed to Fa-Hien who visited India during 399-411 CE.
- It has around 100 caves

## Reunion Island

**News:** The navies of India and France recently conducted their second joint patrolling in the French island of La Reunion in the South-Western Indian Ocean.





**About:**

- It is an island in the Indian Ocean that is an overseas department and region of France.
- It is located approximately 950km east of the island of Madagascar and 175 km southwest of the island of Mauritius.
- Reunion is an outermost region of the European Union and is part of the eurozone.
- Reunion and the fellow French overseas department of Mayotte are the only eurozone regions located in the Southern Hemisphere.

**Nikhath Zareen**

**News:** India's Nikhat Zareen won the gold medal at Women's World Boxing Championships, defeating Thailand's Jitpong Jutamas in 52 Kg final.



**About:**

- The Nizamabad (Telangana) born boxer became the only fifth Indian woman boxer to secure gold medal at the World Boxing Championships after record six-time champion Mary Kom (2002, 2005, 2006, 2008, 2010 and 2018), Sarita Devi (2006), Jenny RL (2006) and Lekha KC (2006).
- It was also India's first gold medal since boxing great Mary Kom won it in 2018.
- Nikhat Zareen's World Championship win is an example of grit, determination and perseverance. She has often talked about how

in her Nizamabad community girls are expected to get an education only to get married and look after the family, and the freedoms that she got to pursue her ambition were exceptional.

**Saint Vincent and the Grenadines**

**News:** Shri Ram Nath Kovind, India's President, recently paid a visit to Saint Vincent and the Grenadines.



**About:**

- It is an island country in the Caribbean.
- It is located in the southeast Windward Islands of the Lesser Antilles, which lie in the West Indies at the southern end of the eastern border of the Caribbean Sea where the latter meets the Atlantic Ocean.

**Respiratory Syncytial Virus (RSV)**

**News:** According to a new estimate published in The Lancet, lower respiratory illness caused by respiratory syncytial virus (RSV) caused more than 1,00,000 fatalities in children under the age of five in 2019.

Respiratory syncytial virus (RSV) infection									
<p>RSV spreads easily by contact with infected droplets of saliva or mucus.</p>	<p><b>Highest-risk populations</b> Young children, especially babies younger than 1 year People with weakened immune systems</p>								
<p><b>Symptoms</b> Begin 3 to 7 days after exposure</p> <table border="0"> <tr> <td>Fever</td> <td>Wheezing</td> </tr> <tr> <td>Runny nose or nasal congestion</td> <td>Difficulty breathing</td> </tr> <tr> <td>Chest congestion</td> <td>Cough</td> </tr> </table>	Fever	Wheezing	Runny nose or nasal congestion	Difficulty breathing	Chest congestion	Cough	<p><b>Treatment</b> There is no specific treatment for RSV infections. Symptoms usually improve within 1 to 2 weeks. Antibiotics are not helpful for RSV infections.</p>		
Fever	Wheezing								
Runny nose or nasal congestion	Difficulty breathing								
Chest congestion	Cough								
<p><b>Prevention</b></p> <table border="0"> <tr> <td>Cover coughs and sneezes.</td> <td>Wash hands frequently.</td> <td>Do not share cups or utensils.</td> <td>Avoid contact with people who have a cold.</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Cover coughs and sneezes.	Wash hands frequently.	Do not share cups or utensils.	Avoid contact with people who have a cold.					<p><b>Fluids</b> Medications to relieve fever or treat other symptoms, such as wheezing</p>
Cover coughs and sneezes.	Wash hands frequently.	Do not share cups or utensils.	Avoid contact with people who have a cold.						

**About:**

- RSV is the most common cause of acute lower respiratory infection in young children.

- It infects the nose, throat, lungs, and breathing passages.
- RSV spreads through contact with respiratory droplets (coughing, sneezing, or kissing) from an infected person.
- An antiviral drug called palivizumab (pah-lih-VIH-zu-mahb) is available to prevent severe RSV illness.

## Project WARDEC

**News:** The army training command signed a MoU with Gandhinagar-based Rashtriya Raksha University (RRU) to develop a 'Wargame Research and Development Centre' in New Delhi.

### About:

- The project, which has been given a prototype name 'WARDEC', will be a first-of-its-kind simulation-based training centre in India that will use Artificial Intelligence (AI) to design virtual reality war-games.
- It will be used by the Army to train its soldiers and test their strategies through 'metaverse-enabled gameplay'.
- The RRU, an institute under the Ministry of Home Affairs (MHA), specializes in national security and policing. Established in Gandhinagar's Lavad village, it is an 'institute of national importance' – a status granted to it by an act of parliament.

## International Tea Day

**News:** The International Tea Day is observed on May 21 every year to raise awareness of the long history and the deep cultural and economic significance of tea around the world.

### About:

- The first International Tea Day was held in Delhi, India in 2005. It was in 2015 that the Indian Government proposed to the United Nations Food and Agriculture Organisation to expand this day globally.
- The day is observed in the month of May because it is during this time of the year that tea production begins in most countries.
- Tea is believed to have originated from the north-eastern parts of India and southwestern China. In these regions, tea production is one of the main sources of livelihood.

- The Tea Board of India was established by the enactment of the Tea Act in 1953 with its headquarters in Kolkata. It is under the administrative control of ministry of commerce and industry.
- The Government through the Tea Board is implementing Tea Development and Promotion Scheme (TPDS) which provides financial assistance to the tea industry in the country.

## World Bee Day

### About:

- May 20 is observed as World Bee Day annually.
- It was on this day in 1734 that Anton Jansa, the pioneer of beekeeping, was born.
- The United Nations proclaimed May 20 as World Bee Day in 2017.

**Theme for 2022: "Bee Engaged: Celebrating the diversity of bees and beekeeping systems".**

### Government's initiatives:

- The National Bee Board has created four modules to impart training as part of the National Beekeeping and Honey Mission (NBHM) and 30 lakh farmers have been trained in beekeeping. They are also being financially supported by the Government.
- The Government has launched 'Honey Mission' as part of 'Sweet Revolution'.
- India is among the world's top five honey producers. According to the Economic Survey, the export of honey has increased by about 110 per cent between 2013-14 to 2019-20.

## Ramban Tunnel

**News:** The Centre has constituted a committee of three independent experts to investigate the reasons for recent collapse of a part of under-construction tunnel in Ramban on Jammu-Srinagar highway and suggest remedial measures.

### About:

- Ramban is a town in J&K
- It lies on the banks of the Chenab river in Chenab Valley on the National Highway-1A (now NH-44) at about 150 km from Jammu and about 150 km from Srinagar.
- Its location makes it almost the central point on the Jammu-Srinagar National Highway.

## Sangita Kalanidhi Awards

**News:** The music academy recently announced Sangita Kalanidhi award winners for the year 2020,2021 and 2022.

### About:

- The award is conferred by the Madras music academy.
- It is considered the highest award in the field of Carnatic music.
- The award comprises of a gold medal and a birudu Patra (citation).

### Madras Music Academy:

- Music Conference held along with All India Congress Session in Madras (1927) laid the idea of a Madras Music Academy. Thus it is an offshoot of INC madras session, 1927.
- It plays an important role in promoting Carnatic Music.

## Digital India BHASHINI

**News:** Recently, the Ministry of Electronics and IT conducted a brainstorming session with Researchers and Start-ups aimed to shape strategy for Digital India BHASHINI (BHASHa Interface for India). The government intends to integrate start-ups' innovation, development and consumption of technology.



### About:

- It is India's AI led language translation platform.
- A Bhashini Platform will make Artificial Intelligence (AI) and Natural Language Processing (NLP) resources available to MSME (Medium, Small and Micro Enterprises), Startups and Individual Innovators in the public domain.

- It is a part of the National Language Translation Mission. The mission aims to ensure that as more Indians connect to the internet, they are able to access global content in their own languages.

## Lavender Festival

**News:** Union Minister Dr. Jitender Singh inaugurated India's 'First Lavender Festival' in Bharderwah.

### About:

- He described Bharderwah as the birthplace of India's Purple Revolution and said that Bharderwah is the potential destination of Agri-tech StartUps of the country.
- India's first National Institute of High Altitude Medicine is also being built in Bharderwah.
- Bharderwah (also Bhadarwah Valley) is a town, tehsil and sub-division in the district Doda of Jammu.



### Lavender:

- Lavandula (common name lavender) is a genus of 47 known species of flowering plants in the mint family, Lamiaceae.
- The flowers may be blue, violet or lilac in the wild species, occasionally blackish purple or yellowish. Lavender has been used over centuries in traditional medicine and cosmetics.
- CSIR-AROMA Mission, under the Ministry of Science & Technology aims to develop and disseminate the aroma-related science and technology to reach the end user/clients of CSIR: Farmers, industry and society.

## Sela Macaque

**News:** A new species of old world monkey recorded from Arunachal Pradesh has been named after a strategic mountain pass at 13,700 ft above sea level.

### About:

- Sela macaque (*Macaca selai*), the new-to-science primate was identified and analysed by a team of experts from the Zoological Survey of India (ZSI) and the University of Calcutta.
- Their study has been published in the latest edition of *Molecular Phylogenetics and Evolution*. Phylogenetics relate to the evolutionary development and diversification of a species or group of organisms.
- The phylogenetic analysis revealed that the Sela macaque was geographically separated from the Arunachal macaque (*Macaca munzala*) of Tawang district by Sela.
- This mountain pass acted as a barrier by restricting the migration of individuals of these two species for approximately two million years, the study said.
- Sela is situated between Dirang and Tawang towns in western Arunachal Pradesh.
- The study says the Sela macaque has a tail longer than the Tibetan macaque, Assamese macaque, Arunachal macaque and the white-cheeked macaque but shorter than the bonnet macaque and toque macaque.
- Sela macaque belongs to the *sinica* species-group of *Macaca*, but it differs from all other members of this group through attributes such as brown collar hair and muzzle, and the absence of chin whiskers.



## International Booker Prize

**News:** *Tomb of Sand*. Written by Geetanjali Shree and translated by Daisy Rockwell, has won the 2022 International Booker Prize for Translated Fiction.

### About:

*Tomb of Sand* is the first book originally written in any Indian language to win the International Booker Prize, and the first novel translated from Hindi to be recognised by the award.

- 'Ret Samadhi' (*Tomb of Sand*) is a family saga set in northern India, the novel follows the adventures of an 80-year-old woman who unexpectedly gains a new, and highly unconventional, lease of life.
- Shree and Rockwell will split the £50,000 prize money, giving the author and translator equal recognition. This book has also won the English PEN translation award.

## Seed Bomb

**News:** Banas Dairy, one of the largest milk cooperative union in Gujarat, is planning to drop seed bombs on the mountain ranges near Ambaji temple in Banaskantha district, where forest cover has depleted by over 578 hectares in the last three years.



### About:

- It is a technique of planting trees by embedding organic seed balls in the ground.
- It is also known as aerial reforestation.
- Vegetation can be introduced in any land by throwing or dropping seed balls in the ground. The best time to execute this process is raining season.
- Seeds planted through this procedure have a success rate of 50%.

## Nechiphu Tunnel

**News:** Border Road Organisation (BRO) has successfully completed the excavation work of the Nechiphu Tunnel.

### About:

- The tunnel is located in Arunachal Pradesh.
- The Tunnel is located at an altitude of 5,700 feet.

- It is located on the Balipara-Charduar-Tawang (BCT) Road in West Kameng district.

## First Movers Coalition

**News:** India recently joined a global public-private partnership initiative called the First Movers Coalition.

**About:**

- The initiative was launched by President of the USA Joe Biden and the World Economic Forum (WEF) at COP26.
- The coalition seeks to decarbonise the heavy industry and long-distance transport sectors that are responsible for 30 percent of global emissions.

**For more information, please refer the following link:**

<https://www.weforum.org/impact/first-movers-coalition-is-tackling-the-climate-crisis/>

## Thanjavur Doll

**News:** Addressing the nation in his Mann Ki Baat programme's on All India Radio, Prime Minister Narendra Modi recounted how he received an interesting gift by a Self-Help Group from Thanjavur in Tamil Nadu.



**About:**

- The gift was a special Thanjavur Doll, which is scripting a new saga of women empowerment as Women's Self-Help Groups' stores and kiosks are opening up in Thanjavur.
- With the help of such kiosks and stores, women are now able to sell their products directly to the customers. The initiative has

been named 'Tharagaigal Kaivinai Porutkal Virpanai Angadi'.

- The Thanjavur doll is a type of traditional Indian bobble head or roly-poly toy made of terracotta material.
- The centre of gravity and total weight of the doll is concentrated at its bottom-most point, generating a dance-like continuous movement with slow oscillations.
- These toys are traditionally handmade, finished with detailed, painted exteriors.
- They have been recognized as a Geographical Indication by the Government of India as of 2008-09.

## International Day of UN Peacekeepers

**News:** The International Day of UN Peacekeepers was observed on May 29, 2022. This year, the theme is People Peace Progress: The Power of Partnerships.

**About:**

- For the past two decades on this day, UN Peacekeepers, also known as the Blue Helmets, are remembered by the world for their role in promoting security, peace and stability.
- More than one million UN peacekeepers have taken part in 72 such operations since 1948.
- India has played a key role in UN Peacekeeping operations. It sent doctors and nurses to Congo in 1960 and then an all women team to Liberia in 2008.



## Red Sanders

**News:** Directorate of revenue intelligence (DRI) has recovered 14.63 MT of Red Sanders worth Rs. 11.70 crore under Operation Rakth Chandan.

**About:**

- Red Sanders is a flora-species that is endemic to a distinct tract of forests in Eastern Ghats region of Andhra Pradesh and fall under 'endangered list' in the International Union for Conservation of Nature (IUCN) Red List.

- Red Sanders is also listed in Appendix-II of the Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES).
- Its rich hue and therapeutic properties are responsible for its high demand across Asia, particularly China, for use in cosmetics, medicinal products and high-end furniture/woodcraft.
- The export of Red Sanders from India is prohibited as per the Foreign Trade Policy.

## Sugar Production

**News:** After a five-year gap, Maharashtra has overtaken Uttar Pradesh to regain its position as India's top sugar producer.

### About:

- The state's output for the 2021-22 crushing year (October-September) is expected at 138 lakh tonnes (lt). That is an all-time-high, beating the previous 107.21 lt of 2018-19.
- This record production is attributed to three factors.
  - The first is the bountiful rainfall since the 2019 southwest monsoon.
  - The second is higher yields from farmers taking extra care of their crop.
  - The third factor is a huge jump in 'unregistered' cane cultivation. The large 'unregistered' area has meant that there is un-harvested cane still in the fields and mills will continue to crush till the first week of June.

## Param Ananta Supercomputer

**News:** PARAM ANANTA Supercomputer was commissioned on May 30, 2022 at IIT Gandhinagar.

### About:

- PARAM ANANTA supercomputing facility is established under Phase 2 of the National Supercomputing Mission (NSM) - a joint initiative of Ministry of Electronics and Information Technology (MeitY) and Department of Science and Technology (DST).
- It is a 838 TeraFlops Supercomputing Facility and is based on Direct Contact Liquid Cooling technology.
- Under NSM, till date 15 supercomputers have been installed across the nation with

aggregate compute capacity of 24 petaflops. All these supercomputers have been manufactured in India and operating on indigenously developed software stack developed by Centre for Development in Advanced Computing (C-DAC).

## Advanced Tower Artillery Gun System (ATAGS)

**News:** The indigenous Advanced Towed Artillery Gun System (ATAGS) developed by the Defence Research and Development Organisation (DRDO) successfully completed the validation trials.

- The ATAGS has demonstrated a range of over 45 km, making it the 'most consistent and accurate gun in the world'.

### About:

- The ATAGS is a 155-mm, 52-calibre artillery gun jointly developed by the DRDO in partnership with Bharat Forge of the Kalyani Group and the Tata Power SED.
- ATAGS has greater than 95% of indigenous content. It set a world record for the longest unassisted projectile range of 48 kilometres.



### Features of ATAGS:

- The gun consists of a barrel, breech mechanism, muzzle brake and recoil mechanism to fire 155 mm calibre ammunition with a firing range of 48 km.
- It has an all-electric drive to ensure reliability and minimum maintenance over a long period of time.
- It has advanced features like high mobility, quick deployability, auxiliary power mode, advanced communication system, automatic

command and control system with night capability in direct fire mode.

## Aarohan 4.0

**News:** Two days meet of senior functionaries of Postal Department and India Post Payments Bank (IPPB), AAROHAN 4.0 started in Shimla.

### About:

- The agenda of the meeting is to deliberate ways to further deepen Financial Inclusion drive in the country.
- India Post Payments Bank(IPPB) has been established under the Department of Posts, Ministry of Communication with 100% equity owned by Government of India.
- IPPB was launched by the Hon'ble Prime Minister Shri Narendra Modi on September 1, 2018.
- The fundamental mandate of IPPB is to remove barriers for the unbanked and under-banked and reach the last mile leveraging a network comprising 160,000 post offices (145,000 in rural areas) and 400,000 postal employees.

## Operation Namkeen

**News:** Under Operation Namkeen, the Directorate of Revenue Intelligence (DRI) has recovered 52 kg of cocaine, estimated to be valued at over Rs 500 crore in the international illicit market.

### About:

- Operation Namkeen was launched by the Directorate of Revenue Intelligence (DRI).
- The Directorate of Revenue Intelligence (DRI) is an Indian intelligence agency. It is India's apex anti-smuggling intelligence, investigations and operations agency.
- The Directorate is run by officers from the Central Board of Indirect Taxes and Customs (CBIC).
- The DRI came into existence in 1957.

## INS Surat and Frigate INS Udaygiri

**News:** Recently, the Defence Minister launched the Indian Navy destroyer warship INS Surat and frigate INS Udaygiri in Mumbai.

### About:

- 'Surat' is the fourth ship of Project 15B Destroyers which heralds a significant makeover of the P15A (Kolkata Class) Destroyers.
- INS Udaygiri is the third ship of Project 17A Frigates. The ship is named after a mountain range in the state of Andhra Pradesh.

### Project 15B:

- The ships are amongst the most technologically advanced Guided Missile Destroyers of the world, with state-of-the-art weapon/sensor package, advanced stealth features and a high degree of automation.
- In 2011, the deal to build four warships – Vishakhapatnam, Mormugao, Imphal and Surat was signed under Project-15B programme.
- The P-15B ships are equipped with Brahmos supersonic cruise missiles and long-range Surface to Air missiles.



### Project 17A Frigates:

- Project 17A frigates are follow-on of the P17 Frigates (Shivalik Class) with improved stealth features, advanced weapons and sensors and platform management systems.
- Important features of P-17A include ship's low acoustic noise emanating from propellers, operating machinery like diesel generators.
- Main advanced stealth features pertain to the smaller radar cross-section of the ship achieved through the use of a special super structure shape which reduces radar wave reflections.