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TATHASTU

Institute of Civil Services



CURRENT AFFAIRS April Month 2023

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Editorials of the Month

Key Takeaways from UN World Water Conference

News: Recently, the United Nations held its first water conference in 46 years on March 22-24 in New York.

Background:

- The U.N. recognized that we are not doing enough to meet SDG 6, which aims to provide clean water and sanitation for everyone by 2030.
- The UN 2023 Water Conference's theme, "**Our watershed moment: uniting the world for water**," aimed to support the achievement of water-related global goals and objectives, including those enumerated in the 2030 Agenda for Sustainable Development.

About UN Water Conference on freshwater:

- It was held in the context of serious environmental issues — flooding, drought, severity of climate change and a looming food crisis.
- The conference marked a **mid-term review** of the **Water Action Decade 2018-2028**
- Advance the water agenda by energizing existing programmes and projects
- Inspiring water action to achieve the 2030 Agenda, in particular Sustainable Development Goal 6 (SDG 6), which envisages the sustainable management of water and sanitation for all.

Key outcomes of conference:

- The central outcome of the conference was the international Water Action Agenda, to which governments, multilateral institutions, businesses, and non-governmental organizations submitted over 670 commitments to address water security issues.
- Nearly 164 governments and 75 multilateral organizations have made commitments.
- The commitments embodied in the Water Action Agenda are voluntary and, therefore, legally non-binding. However, the voluntary commitments are expected to inspire the collective political will, which is needed to address the many water challenges.
- There were specific innovations in wastewater treatment or solar treatment of water in remote areas, and several proposals for incubation platforms, including the IBM Sustainability Accelerator, focused on water management.
- A potential useful tool to address water issues was the **W12+ Blueprint**, a UNESCO platform that hosts city profiles and case studies of programs, technologies, and policies that address common water security challenges.
- The conference highlighted that the **lack of incentives** is a **major hindrance** for **farmers and industries** to use **water efficiently** and **sustainably**. The **integration of environmental, social, and corporate governance** into the **Water Action Agenda** is a positive step towards effective water governance.

Challenges that need to be addressed:

- According to The World Resources Institute (WRI) the commitments made by the states reflected scope and ambition but it lacked proper finance and targets that are quantifiable in nature.
- There are serious limitations in our knowledge about the volume, flux and quality of water in lakes, rivers, soils and aquifers.
- There are huge gaps in water usage data. The metering of water has triggered resistance from India to Ireland because of concerns about equitable access and affordability of water services'.
- Funding from regional, national, and international sources prioritizes new water infrastructure rather than on water maintenance services (World Bank study). It results in decreased service for water customers.
- The World Bank estimates project recurring operations and maintenance service (WASH) costs to rise from about \$4 billion to over \$30 billion per year by 2030, which is far more than the capital costs for basic WASH services.
- Water does not qualify to be a global public goods as it is not considered to be an area of urgent funding as compared to climate change.

What was India's commitment at conference?

- An investment of \$240 billion in the water sector and efforts to restore groundwater level.

Importance of Groundwater in India:

- Groundwater is the backbone of India's agriculture and drinking water security in rural and urban areas. It meets nearly 80% of the country's drinking water and two-thirds of its irrigation needs.
- According to CAG report (2021) the groundwater extraction in India increased from 58% to 63% between 2004-17. This has further increased due climate change resulting in intermittent rainfall, which further undermines the recharge potential.
- The revised Groundwater Bill 2017 vests State groundwater boards with creating laws, managing water allocation and other relevant issues.

Building a Blue Economy

News: This editorial talks about the potential of Fisheries sector in India and some of the lessons that we can learn from China in this regard.

Important stats about Fisheries sector in India:

- India is the 3rd largest fish producing nation and 2nd largest aquaculture nation in the world. India contributes 7.7% to the global fish production and country ranks 4th in global export of fish products.
- Fisheries provide livelihood to about 15 million fishers and fish-farmers at the primary level, and generates almost twice the number of jobs, along the value-chain — in transportation, cold-storages, and marketing.
- Since Independence, India's marine fishery has been dominated by the "artisanal sector" – delivering only 2% of marine fish to the market [98% – caught by mechanised craft].
- Commercial fishing has shown steady growth and has become a major contributor to foreign exchange. India – is a leading seafood exporting nation.
- These figures could have been much higher had India invested in a **deepwater fleet**. Since Indian trawlers do not venture into rich fishing grounds, most of the fishing is being undertaken in coastal waters and our fishermen have to compete with those of neighbours, Sri Lanka and Pakistan, in restricted fishing grounds.

Significance of Fisheries sector:

- **Food security** – It provides important food and nutritional resources, especially for rural economies. It addresses "hidden hunger" as fishes are source of essential dietary micro-nutrients.
- **Economy** – Many of fisheries are conducted by the rural poor, often for subsistence and small-scale farming. Fisheries provide livelihood to 15 million fishers and fish farmers at primary level and twice the number along the value chain.
- **Social** – Fisheries provides an identity to major communities around the world. Fisheries form the last resort to work when there is loss of job, war, natural disasters
- **Environment** – Inland fisheries serve as indicators of ecosystem function and ecosystem change.
- **Empowerment** – The sector empowers poor rural communities to fight for their existence, livelihoods and physiological needs. It prevents from poverty and marginalization.

Constraints in growth of Fisheries sector

- **Inadequate Infrastructure** – Especially, fishing harbors, vessels, cold chain and distribution, non-availability of skilled manpower
- **Climate Change** – The rising temperature around the world has made oceans warmer which results in non-conducive environment for fish population to thrive, multiply. Fish cannot adjust their body temperature.
- **Over-exploitation of resources** – Increased human need for food, minerals within oceans, other broad based needs leads to unsustainable fishing which threatens marine ecosystem as a whole.
- Urban development, Degradation, river-dredging
- **Invasive species** – Introduction of exotic or alien invasive species is one of the greatest global threats to native fish communities
- **Low Value addition** - Currently, most of India's fisheries exports are at a low level of value addition — in frozen and chilled form — without going for higher-order "ready-to-eat" or "ready-to-cook" marine products.

- **Untapped potential** - Rich resources in India's EEZ remain underexploited and much of the catch from our fishing grounds is taken away by the better equipped fishing fleets of other Indo-Pacific countries.

What is the need of the hour?

India needs to evolve a long-term vision for its fishing industry with focus on four areas:

- Mechanisation and modernisation of fishing vessels by providing communication links and electronic fish-detection devices, with artisanal fishers being funded for this.
- Developing deep-water fishing fleets, with bigger, sea-going trawlers equipped with refrigeration facilities.
- A DWF fleet will have to be built around the "mother ship" concept.
- Development of modern fishing harbours with adequate berthing and post-harvest facilities, including cold storage, preservation, and packaging of fish.

Government initiatives:

- **Pradhan Mantri Matsya Sampadaya Yojana** – Launched in 2019, this schemes aimed to double fishers and fish farmer's income and generate meaningful employment and enhance contribution of fisheries to Agricultural GVA and exports.
- **National Policy on Marine Fisheries 2020** – To develop ecologically healthy, economically viable and socially inclusive fisheries sector. It aims to secure food and nutritional security in a sustainable manner.
- Extending support of Kisan Credit card (KCC) to fishermen and women
- Ministry of Fisheries, Animal husbandry and Dairy – A separate department is extended to ensure focused approach towards this segment

Fake News

News: Top social media platforms including Meta and Google have sent a proposal to the Centre detailing their plans to create a network of fact-checkers who will verify dubious content posted on their platforms.

Background:

- The network, being billed as the '**Misinformation Combat Alliance**', is expected to be joined by major social media platforms.
- Recently, the government also proposed to setup its own fact checking unit to curb fake news and misinformation on social media.
- Also, last month, a malicious misinformation campaign led to law and order issues in Tamil Nadu, where false claims about violence against migrant workers from Bihar were propagated through social media.
- In this context, we will discuss about fake news, its impact and what efforts are being made to address the issue.

What are Fake news?

- Fake news is information that is clearly and demonstrably fabricated and that has been packaged and distributed to appear as legitimate news.
- Fake news overlaps with other information disorders, such as misinformation (false or misleading information) and disinformation (false information that is purposely spread to deceive people)."

What are factors that contribute to spread of Fake news in India?

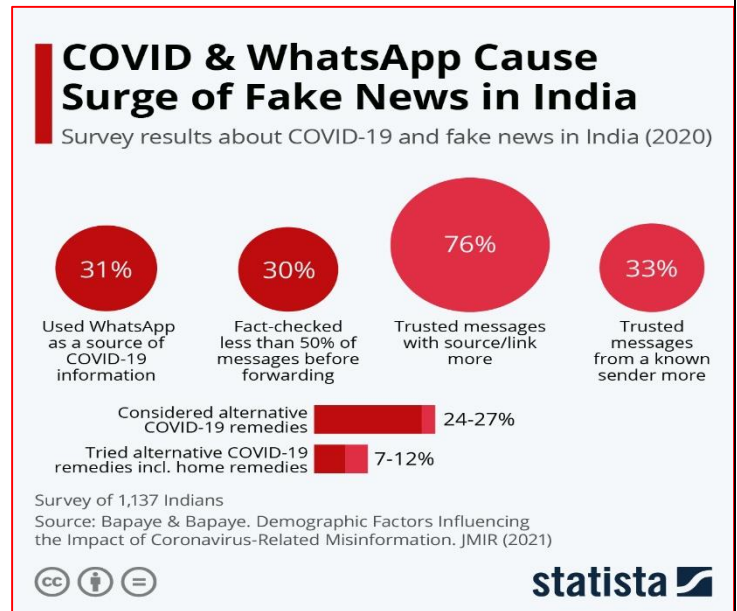
- Rise of Social media platforms
- Dearth of Media literacy skills which makes them more susceptible to both believing and sharing fake news
- Priority given to sensationalism rather than truth/accuracy by few media outlets
- Financial incentives given to spread fake news



- Lack of effort by individuals to fact-check or cross-verify content before sharing it to other people
- India's political landscape is highly polarized which is a factor as well

Impact of Fake news:

- Spread of false and misleading information often create panic and fear amongst people in society. For example, multiple fake news shared regarding closure of banks and people panic believing it to be true and bringing home their deposits. In 2019, RBI had slammed social media platforms for allowing such fake news to be circulated on their platforms.
- It erodes trust in institutions and creates confusion among public. For example, the false claim that the COVID-19 vaccine causes infertility in women.
- Fake news affects the spirit of common brotherhood and increases intolerance in the country. For example, a mass exodus of North-Easterners from Bangalore in 2012 was based on false online threats.
- It fuels communal tensions and can create political polarization by reinforcing biases and promoting one-sided views of certain events.
- Fake news can have an economic impact, particularly on businesses or industries that are targeted by false information.
- Fake news over prescriptions of certain medicines during Covid-19 prompted people to often use unsafe or ineffective medicines which had adverse impact on health of people.



What are remedies available for controlling fake news?

- **The Information Technology (IT) Act, 2000** provides for penalties for publishing or transmitting obscene or defamatory material on the internet, including fake news.
- **Article 51A (h)** of the Constitution, which states that "It shall be the duty of every citizen to develop the scientific temper, humanism, and spirit of inquiry and reform" offers a long-term solution.
- **Fact-checking organisations** have come up in India to combat menace of fake news. The PIB had launched its own Fact-checking unit in 2019 to combat fake news.
- Several Indian cities have established **cybercrime cells** that investigate cases related to fake news and other forms of cybercrime.
- The Disaster Management Act 2005 and the Epidemic Diseases Act 1897 helped (especially during Covid-19) regulate the circulation of fake news or rumours that can cause panic among citizens.
- The **recent amendment to IT Rules** introduces the creation of **fact-check bodies** to identify whether information related to the Central government is accurate or not.
- The **European Union (EU)** has implemented a **Code of Practice on Disinformation**. This includes measures like transparency in political advertising, support for fact-checkers and researchers, tools to identify disinformation, and measures to reduce manipulative behaviour.

What steps can be taken to curb Fake news?

- Media literacy programs can be promoted to help distinguish between reliable and unreliable news content.
- Social media platforms should take responsibility for preventing the spread of fake news on their platforms.
- Promote websites that work exclusively on fact checking and accuracy of news stories.
- Provision of stringent penalties on those who promote fake news.



- Sometimes, people themselves must take the lead and check/verify news content without inherent bias. At times, reporting/flagging incorrect videos, news content can also help. For example, on twitter you can report accounts that share fake news and Twitter also replies upon taking actions.

Online Dispute Resolution

News: At the Delhi Arbitration Weekend in February 2023, Union Law Minister emphasised the need for institutional arbitration to enhance the ease of doing business.

Background:

- India may have missed the bus in becoming an international arbitration hub, there is potential for the country to catch up with Online Dispute Redressal (ODR).
- Considering the current issue of cases pending for prolonged periods, Online Dispute Resolution (ODR) has the capability to provide accessible justice to everyone, thereby tackling the problem.

What is ODR?

- It is the resolution of disputes, particularly small and medium-value cases.
- It uses digital technology and techniques of Alternate Dispute Resolution (ADR), such as negotiation, mediation and arbitration.
- It utilizes **information technology** to carry out ADR.
- The **information management and communication tools** in ODR may apply to all or part of the proceedings and also have an impact on the methods by which the disputes are being solved.

How is ODR implemented in India?

- The United Nations Commission on International Trade Law (UNCITRAL) adopted the **UNCITRAL Model Law** on International Commercial Arbitration in 1985 and the **UNCITRAL Conciliation Rules in 1980**.
- The **United Nations General Assembly (UNGA)** has recommended the use of the said **Model Law and Rules** in cases where a dispute arises in the context of international commercial relations and the parties seek an amicable settlement of that dispute by recourse to conciliation.
- **Mumbai Centre for International Arbitration (MCIA)** and the **Delhi International Arbitration Centre (DIAC)** were started by Indian government to promote institutional arbitration. International arbitration centre at GIFT city was also announced in 2022.
- In addition to these institutions, the Indian government has also enacted the **Arbitration and Conciliation (Amendment) Act, 2019**, which seeks to streamline the arbitration process in India and make it more time-bound and cost-effective.

Impact of ODR on India's business environment:

- **Faster resolution** of disputes
- **Cost effective** – SME's find it difficult to bear the brunt of high legal costs. ODR eliminates the need for physical hearings, travel.
- **Increased access to justice** as it promotes remote dispute resolution.
- **More efficiency** over traditional way of resolution as it encourages use of technology to settle disputes.
- ODR can help **improve compliance** as it provides a structured process for dispute resolution.

Limitations:

- India is not a preferred arbitration destination, even for disputes between Indian businesses. Many still seek arbitration abroad, even when the dispute is with another Indian entity.
- India has earlier acquired a reputation of being '**arbitration-unfriendly**: **Srikrishna Committee(2017)** due to Lack of preference for institutional arbitration over ad hoc arbitration, frequent interference from the judiciary from the appointment of arbitrators to the enforcement of awards and setting aside arbitral awards on grounds of 'public policy'.
- ODR takes place entirely in the digital realm, which makes it challenging to verify the identity of the parties involved in a dispute. The **lack of physical presence** can also make it difficult to enforce judgments, as there is no way to physically seize assets or property.

- Online transactions can involve parties from different countries, which can create **jurisdictional challenges**. Different countries have different laws, and it can be difficult to determine which laws apply to a particular dispute.
- Not all parties have equal access to ODR platforms, which can exacerbate power imbalances.

Way Forward:

- **Incentivise** use of ODR by way of **legislative measures** such as setting ODR as a default dispute resolution tool for categories of disputes arising out of online transactions, fast-tracking enforcement of ODR outcomes, and exempting or reducing stamp duty and court fees.
- Each court can have an ODR cell along with supplemental technical and administrative support.
- Solve infrastructural challenges, curb the digital divide, and catalyze ODR's growth by optimizing existing setups such as Aadhaar kendras to also function as ODR kiosks.
- ODR has the potential to ensure justice for all, at everyone's fingertips. India may have missed the bus to become an arbitration hub, but it can still catch up and overtake them all online.

Drug Trafficking in India

News: Recently, The Ministry of Home Affairs (MHA) has informed the Rajya Sabha the Narcotics Control Bureau (NCB) has noticed the use of the darknet and cryptocurrency for drug trafficking in 38 cases in the last three years.



Drug Trafficking in India:

- The UN Office on Drugs and Crime's World Drug Report 2022 revealed that India is **one of the world's largest opiate markets in terms of users** and **is vulnerable** to increased supply from Afghanistan. Punjab and Himachal Pradesh are leading in India's epidemic of opioid users, while Gujarat is now the third worst state in terms of drug overdose deaths.
- As per the survey report of the Ministry of Social Justice & Empowerment published in 2019, the consumption of drugs in India has increased as compared to the survey report in 2004.
- Studies reveal that **62 per cent of the darknet** is being used for illicit drug trafficking. Darknet markets are disrupting traditional drug markets because of their anonymity and low risks.

What are the reasons for heightened Drug Trafficking in India?

- Increased production of Opium in Afghanistan especially after Taliban taking over the reign.
- India's favorable geographical location - Traditionally India has been seen as sandwiched between the Death (Golden) Crescent and Death (Golden) Triangle. The country is being flooded with drugs, especially heroin and methamphetamine, from these two regions by drug lords indirectly supported by intelligence setups.
- Greater domestic demand in India.
- India shares borders with several countries that are known for drug production and trafficking, and these borders are often poorly guarded and easily penetrated by smugglers. For example, North-east shares borders with the likes of Myanmar, Nepal, Bangladesh etc.
- Lack of awareness about dangers of drug abuse.

- Corruption among law enforcement agencies and government officials allows drug traffickers to operate with impunity.

Drugs Trade as a threat to National security:

- Money generated by the illegal sale of narcotics and drugs is used for **financing terrorist activities** and also **left wing extremism** in India.
- It facilitates other organised crimes. For example, during Pathankot attacks, the terrorists entered India from Pakistan through routes that was tried by drug peddlers.
- Rising drug consumption leads to other problems such as loss of productive capacity of individuals, economic drain and increased allocation of resources towards rehabilitation measures. According to a study conducted by the **Indian Army in 2018**, around **40% of the youth** in Jammu and Kashmir suffer from **some form of drug addiction**, which was below 5% in 2008
- It also leads to **law and order problems** in the society.
- **Narco Terrorism** - It is the nexus between drug traffickers, criminal networks and terrorists where the aim is to destabilise the nation through the use of terrorism or weaken it through illegal drug trade.

FACTORS WORKING IN FAVOUR OF SMUGGLERS

- 1** Easy availability of couriers who are paid up to ₹60,000 for each transfer
- 2** Indian jails have ironically helped smugglers develop new contacts and a strong network
- 3** Well-knit syndicates overseeing operations
- 4** Non-availability of pucca roads along the International Border in Punjab, suitable observation posts & obsolete infrastructure for border floodlights

THE DRUG TRAIL

Afghanistan, Pakistan, Punjab, INDIA, rest of country

MODUS OPERANDI

- Tunnels are dug under the fence, through which drugs—in packages strung together in ropes of cloth—are transferred
- Complicity of state forensic laboratory staff, who help with inaccurate analysis about the purity of the narcotics seized
- Smugglers in India use Pakistani SIM cards and vice versa to evade technical surveillance

What are the various initiatives undertaken to regulate Drug trafficking in India?

- **National Policy on Narcotic Drugs and Psychotropic Substances (NDPS)** - It was introduced in 1985 to regulate drug trafficking and the use of narcotic drugs and psychotropic substances in India. Under the NDPS Act, cultivation, manufacturing, transportation, export and import of all narcotics drugs and psychotropic substances is prohibited except for medicinal and scientific purposes and as authorized by the government.
- Ensuring **physical security** of the borders and coasts by strengthening patrolling and surveillance.
- **Nasha Mukt Bharat Annual Action Plan (2020-21)** for 272 Most Affected Districts (in terms of usage of drugs in the country) for awareness building and enhancing community participation.
- **National Narcotics Coordination Portal (NCORD)** and **NIDAAN** portal by Ministry of Home Affairs.
- **Integrated Rehabilitation Centers for Addicts (IRCA)** The Ministry of Social Justice and empowerment provides financial assistance to NGOs and voluntary organizations for the maintenance of Integrated Rehabilitation Centers for Addicts
- **India is a signatory to the three UN Conventions** namely, Single Convention on Narcotic Drugs, 1961, Convention on Psychotropic Substances, 1971 and Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988.
- India cooperates with other countries through **joint operations** and **sharing of intelligence** to prevent drug trafficking. **Role of Indian Coast Guard** has been noteworthy in this context.

NIDAAN
National Integrated Database on Arrested Narco Offenders

<https://nidaan.nic.in>
Developed by NIC

- Created in cooperation with ICJS by NCB on the directions of MHA.
- Details available: name, photo, fingerprint, judicial & criminal records etc.
- Access to be given to DLEAS.
- Data compiled from LEAs & Prisons.
- Integrated with NCORD portal.
- Also includes Proclaimed Offenders data of NCB

www.nic.in @NICMety National Informatics Centre, Metry @NICIndia @NIC @nicmety NationalInformaticsCentre

Way Forward:

- The government should take measures to **strengthen the law enforcement agencies involved in drug control** (Customs, the Narcotics Control Bureau, and state police forces)
- Provide **adequate treatment** to those who have already been victims of drug abuse. It is important to create infrastructure that caters to this menace and equally important to raise awareness campaigns especially in vulnerable regions of country.

- Factors that contribute to drug trafficking like poverty, lack of education, unemployment needs to be addressed.
- Promote international co-operation while emphasizing on regional cooperation first to jointly tackle Drug abuse.
- The government can improve border control by increasing surveillance, using advanced technology and equipment, and strengthening border security forces.

Chinese Shenanigans on Arunachal Pradesh

News: Recently, China's Ministry of Civil Affairs, released new names for 11 places in Arunachal Pradesh under the fig leaf of standardizing geographical names in "**Zangnan**" (a term used by China to claim that Arunachal Pradesh is "South Tibet").

Background:

- China's steps of naming places include two residential areas, five mountain peaks, two rivers and other two other areas".
- Back in 2017 as well China had 'renamed' six places that lie in Arunachal Pradesh.
- China launched the construction of **dual-purpose villages**, the Xiaokang villages, in areas adjacent to the border with India, from Ladakh to Arunachal Pradesh.

Where are the places located?

- Some of the places are located along the **Pangchen-Tawang-Jang-Sela** axis running down from the Line of Actual Control
- Some are located near old Buddhist pilgrimage circuits near **Taksing** in Upper Subansiri district
- **Mechuka-Tato** tehsil in West Siang and towards the **Lohit** and **Anjaw** districts, near Walong.

What is Chinese Modus operandi?

- It is to lay the groundwork through **fictional renaming** of alien territories as a basis for sham "historical" claims which are then pursued using the warfares" strategy of - Waging propaganda and Psychological and legal warfare.
- In the words of Sun Tzu they believe in the acme of **skill is winning without fighting**.
- Although their Foreign Minister emphasizes that as neighboring countries and major developing economies, China and India have far more common interests than differences. However, the reality is far from different as they engage in renaming places, denial of visas to few Indian media personnel who they believe are not pliable to serve their interests.

What are legislations followed by China for renaming?

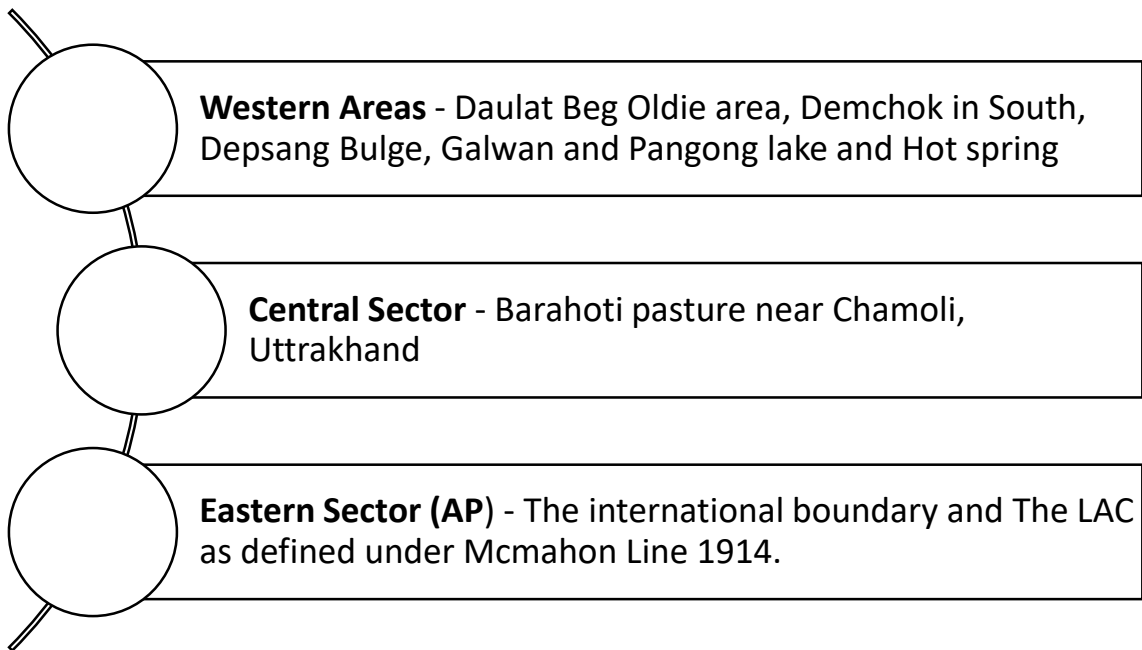
- **Geographical Name Regulation** in 1986 designed to regulate naming, renaming, and standardization exercises. **Amended rule in 2022**. These pieces of legislation mainly dealt with naming, renaming, and standardizing names within China, They also cover several alien territories claimed by China.
- **New Coast Guard Law** in 2021, to take necessary measures, including the **use of force**, to safeguard "sovereignty".
- **New law** on the protection and exploitation of the country's land border areas in 2022 – It has the effect of converting the boundary dispute with India into a sovereignty issue.

Why are Chinese claims over Arunachal Pradesh false and superficial in nature?

- According to the book, Tibet and Its History by Hugh Edward Richardson: Qing presence in Tibet began to emerge around 1720.
- After Chinese intervention in the internecine succession struggle following the death of the Sixth Dalai Lama (1683-1706). Therefore, there is absolutely no basis to the Chinese claim over Tawang, or any other part of Arunachal Pradesh on the grounds that it is the birthplace of the Sixth Dalai Lama.
- A study of the 1960 reports of the officials of the two sides on the boundary question reveals the vague, patchy and superficial nature of "evidence" proffered by the Chinese side in support of Beijing's boundary claims.

- Arunachal Pradesh (formerly North-East Frontier Agency (NEFA), is home to various tribes that have historically been a part of India’s civilizational heritage. Most of its populace has been historically oriented towards the Assam plains. The tribes were in regular contact with the Ahom power in Assam, including for the grant of rights to levy the Poshha from the plains people in the adjacent areas.
- Some tribes, such as the Monpas, have professed Buddhism, others follow animistic practices.
- The Mahabharata, the Ramayana, the Kalika Purana, the Vishnu Purana, the Yogini Purana, and Kalidasa’s Raghuvamsa have references, indication of the inclusion of these tribal tracts in the collective consciousness and cultural moorings of ancient India. These sources have indications about the **boundaries of the kingdoms of Pragjyotisha and Kamarupa**, whose limits appeared to include the whole of Arunachal Pradesh.
- The **Shiva Linga in Ziro, Parshuram Kund**, and the temple ruins of Malinithan, which are connected to the legends of Parashuram, Rukmini, Bhishmaka and Sishupala, show an ancient Hindu influence in the region.
- Archaeological finds have unearthed silver coins and inscriptions in the Arabic script at Bhalukpong, linked to a Muslim ruler of Bengal.
- The architecture of many forts, such as those at Bhalukpong, Ita and Bhismanagar (built between the 10th and 16th centuries). It is heavily influenced by the architectural principles of fort construction found in the Ramayana, the Mahabharata, and Arthashastra. These forts were frontier posts of the security system that was prevalent in the Brahmaputra Valley.

What are present areas of disputes?



Has China renamed places elsewhere as well?

- In 2020, China gave names to 80 geographical features in the **Paracels** and **Spratlys Islands** in the South China Sea. (This dispute involves many South-east Asian countries)
- Using the term “**Diaoyutai**” for the **Senkaku Islands** in the East China Sea in the 1950s, even before raking up the Senkaku issue with Japan.

What should India do?

- There is lack of comparable influence of any Chinese culture on Arunachal Pradesh as a whole. Thus, India must reject China’s false claims of renaming places in Arunachal Pradesh and should rather assign Indian names to places under illegal occupation of China.
- Aksai Chin, may be called Akshaya Chinha — which means an “everlasting symbol” (of India).

Heat Wave – The Silent Killer

News: Recently, India's Meteorological Department issued Heatwave alert across India.

What is a Heat Wave?

- There is no universal definition of heatwaves but prolonged period of excessive heat is referred to as Heat Wave.
- However, IMD has set certain criteria to declare heat wave.

IMD criteria:

- Heat Wave need not be considered till maximum temperature of a station reaches at least 40°C for Plains and at-least 30°C for Hilly regions.
- If the normal maximum temperature of a station is less than or equal to 40°C, then an increase of 5°C to 6°C from the normal temperature is considered to be heat wave condition.
- Further, an increase of 7°C or more from the normal temperature is considered a severe heat wave condition.
- If the normal maximum temperature of a station is more than 40°C, then an increase of 4°C to 5°C from the normal temperature is considered to be heat wave condition. Further, an increase of 6°C or more is considered a severe heat wave condition.
- Additionally, if the actual maximum temperature remains 45°C or more irrespective of normal maximum temperature, a heat wave is declared.

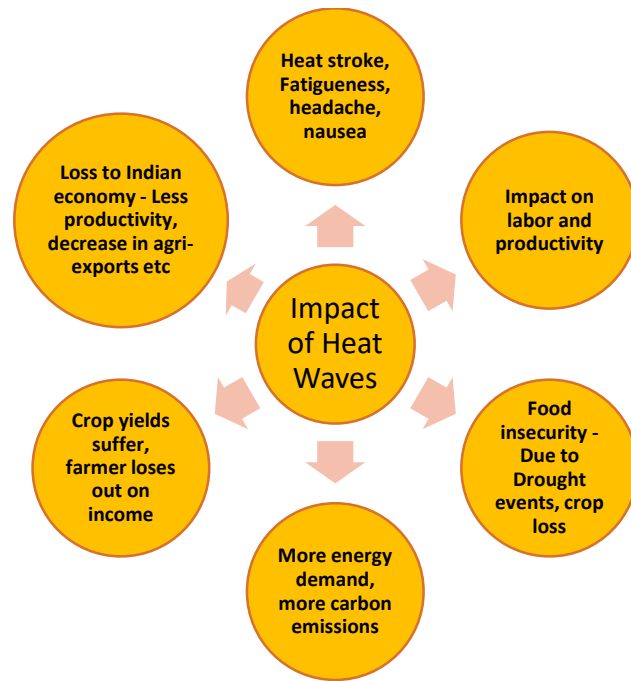
Heat wave Scenario	40°C	30°C	
Maximum Temperature	Plains	Hills	
Heat wave conditions prevail when...		Severe heat wave conditions prevail when...	
Normal maximum temperature	Deviation from normal	Normal maximum temperature	Deviation from normal
▲ Above	▲ Above	▲ Above	▲ Above
40°C	4-5°C or more	40°C	6°C or more
▼ At or below	▼ At or below	▼ At or below	▼ At or below
40°C	5-6°C or more	40°C	7°C or more

What are the concerns for India?

- According to a study, 90% of India is in 'Danger Zone', vulnerable to intense heat waves.
- Around 49% of Indian workers work outdoor (230 million plus workers) – Source Hindustan Times 2022.
- Since 1992, over 24,000 people have died in India due to extreme heat.
- 15% decline in outdoor working capacity and extreme heat could lead potential loss in GDP of 2.8% by 2050. (Source - Al Jazeera)

What are the causes of Heat waves?

- Little pre-monsoon showers
- Decrease in moisture content in many parts of India.
- Impact of El-Nino
- Global warming and climate change



What actions should we take?

- Greener and more permeable urban surfaces can help reduce urban heat.
- Policies and guidelines on weather variability and urban heat management are needed at various levels.
- Restoration of ponds, lakes, wetlands can provide cooling effect in urban areas. **Amrit Sarovar mission** is a step in right direction in this context.
- Promoting the use of renewable energy sources such as solar and wind energy for cooling and electricity needs.
- Supporting farmers with resilient farming practices that take into account the risks of heatwaves, droughts, and water scarcity.
- Promoting the use of green roofs and cool roofs in buildings, increasing ventilation, and setting up green spaces.
- Passive cooling techniques such as natural ventilation, shading, and thermal insulation can significantly reduce indoor temperatures and energy consumption.
- Basic guidelines that pertain to people can be communicated well with people. For example, drinking butter milk, having onions in your diet, hydrating yourself at sufficient intervals, not roaming out in the noon hours, asking elderly people to stay indoors can be life-saving advices at times.

How AI can help Environment

News: A recent study commissioned by tech giant Microsoft estimated that AI applications in the sectors of agriculture, water, energy and transport could lead to a 4% cut in greenhouse gas emissions by 2030 — equivalent to the annual emissions of Australia, Canada and Japan combined.

Instructions – Try to remember some of the example. Use such innovative example to add value to your answers.

Application of AI in managing environment:

Monitoring Deforestation

- Deforestation and land use changes cause more than 10% of global greenhouse gas emissions. Trees absorb carbon dioxide and store it for long periods of time, and when they're cut down, much of that CO2 escapes into the atmosphere.
- To curb illegal land clearing, the nonprofit **Rainforest Connection** attaches **acoustic monitoring sensors** to trees that “eavesdrop” on the surrounding forest and transmit that audio in real-time to the cloud.
- Almost 600 of these devices, dubbed “guardians,” have been installed in 35 countries, from Brazil to Indonesia, Congo to the Philippines.

- The data is analyzed by a **machine learning model** that has been trained to recognize sounds linked to illegal logging, such as a chainsaw or truck. Alerts are then sent out to authorities on the ground.

Cutting energy waste in buildings

- Using AI to optimize heating, ventilation, and air conditioning systems (HVAC) in buildings.
- Design firm Arup came up with an app called Neuron that uses 5G and Internet of Things sensors to gather real-time data from a building's energy management system.

Wildlife conservation

- Poaching and habitat destruction caused rhino numbers to dwindle throughout the 20th century.
- The South Africa-based company **Rouxcel Technology** has developed **AI-enabled bracelets** that fit around rhinos' ankles to help conservation teams easily locate the animals and monitor their behavior in real time.
- The **company's algorithms use machine learning** to spot when an animal is exhibiting **abnormal movement patterns** — a signal that it might be distressed. When poachers are close, it sends alert to Forest officials.

Smart Farming

- Agriculture, forestry and land use account for around 18% of global CO2 emissions.
- Algorithms can be used to make precise recommendations about plant health and exactly how much water and fertilizer to use. This can both boost yields and reduce wasted resources.

Climate Modelling

- Using AI to make predictions about climate patterns and inform climate policy.
- The UK's Met Office, which uses AI to model climate patterns and inform government policy on climate change.

Carbon footprint reduction in the industry

- Using AI to optimize industrial processes and reduce carbon emissions
- Fero Labs' AI-driven optimization software, which reduces the amount of mined ingredients used in steel production.

Population – Boon or Bane?

News: The article is in continuation of SWP report 2023.

Background:

- A rising population, particularly for a young country like India, creates numerous opportunities that can contribute to economic growth and social development.
- Population is a resource as long as the country's carrying capacity is intact.
- Carrying capacity is not just per capita availability of natural resources, it is a dynamic concept that changes according to changing technology, and the efficiency of the production and consumption systems of a country.

What are opportunities created by rising population?

- With **68% of the working age population** in 2023, the country continues to have a **Demographic window** of opportunity for the next 35 years to reap an economic dividend. It can be reaped through job creation, education, skills generation.
- A young population has unique ideas and can lead to **innovation, entrepreneurship, economic growth** through startups in different sectors such as healthcare, education, defence, fintech, agriculture.
- Investments in **skill development** can help create a **demand-driven ecosystem** that addresses market needs and increases employment opportunities.
- A larger workforce with better skills and well paid jobs is also likely to **consume more** which will boost the economy and contribute to overall development.
- With more focus on women-led development, India can benefit from higher female labor force participation rates.
- India's rising population, combined with its position as the world's largest democracy and a major economy, can help it become a global manufacturing hub, startup capital, and exporter of skilled manpower.

What are challenges associated with rising population?

- India's rising working-age population must also be followed with creation of livelihood opportunities, increased expenditure on skilling, education and healthcare.
- India's population is also ageing as life-expectancy is improving. This will come at a cost to government in terms of senior citizens welfare, rising pension costs and increased allocation on healthcare.
- A study has found that India might grow old before it becomes rich. This is because of failure to realize demographic dividend due to lower focus on education, lack of skilled manpower and lack of employment opportunities.
- There are large inter-state disparities in population and growth rates. Rising population in some States will force out-migration into States with lower population and more developed economies.
- Large population has posed challenges to the achievement of the UN's Sustainable Development Goals (SDGs).

What is the need of the hour?

It is important that as a nation our policies, actions around Rising population are seen with an opportunity rather than as a challenge. For that we must follow following steps:

- Focus on skill development and employment opportunities for the youth to capitalize on the demographic dividend.
- Higher women labor force participation, promote gender equality and empower women to make decisions about life, their goals and make choices about their reproductive health.
- Build smart and resilient cities that can absorb migration by investing in public transportation, hospitals, schools and sanitation systems.
- Improve access to quality healthcare services, particularly for woman and children.
- Lastly, basic awareness around topics of family planning and reproductive health of women can go a long way to address rising population.

Mega Science, Mega Dreams

News: Recently, the Union Cabinet approved the full budget for the LIGO-India mega-science project, which includes the construction, commissioning and joint scientific operation of a state-of-the-art, advanced Laser Interferometer Gravitational-Wave Observatory (LIGO) in India.

Background:

- In this editorial we will analyze the impact of the project which is a step to secure country's future as a science powerhouse.

Impact of LIGO-India project:

- It will enable dramatically enhanced global capability in the emergent field of **gravitational-wave astronomy** and **astrophysics (A&A)**.
- LIGO-India will also prompt Indian S&T in academia, national laboratories and industries to leap-frog in a sweeping range of **cutting-edge technologies of great national relevance**. **For example**, it can help synergize with **quantum sensing** and **metrology vertical of National mission for Quantum technology and Application** which will help India take a lead in future advance of **Gravitational wave detectors**.
- The project has **created excitement** among scientists. A large **number of young Indian students** and researchers **have chosen to join** the global and national gravitational wave community.
- Mega science projects involve multiple departments to work together. Thus, such projects will encourage co-operation and co-ordination among different departments – Department of Sci & Tech, Department of Atomic energy.
- India is walking this path with its partnership in "big-science" frontier international ventures, such as **Large Hadron Collider** (LHC) Facility for Antiproton & Ion Research (FAIR); **ITER** for taming thermo-nuclear fusion for energy generation; **Thirty Meter Telescope** (TMT); and **Square Kilometre Array** (SKA).
- Mega-science projects also inculcate invaluable elements of work ethic in the scientific community.

Conclusion

- As we set up LIGO-India, there is confidence that our demographic advantage, coupled with our excellent education system, should see India attain global eminence in the field and its allied S&T.

General Studies - 1

History and Culture

Vaikom Satyagraha

News: The Vaikom temple street entry movement in Kerala, with a resonance in Tamil Nadu, began on 30th March 1924 at the Vaikom Mahadeva Temple.

Importance of March 30:

- It was a significant day in connection with Vaikom, a serene town in Kottayam, Kerala.
- The date marks the commencement of the centenary year of the Vaikom temple street entry movement that was launched in 1924, and a milestone in temple entry movements in India.
- The non-violent movement was to end the prohibition imposed on backward communities in using the roads around the Vaikom Mahadeva temple.
- It was the prelude to the temple entry proclamation of Kerala in 1936
- It was launched by leaders in Kerala such as T.K. Madhavan, K.P. Kesava Menon and George Joseph, on the advice of Mahatma Gandhi. The movement was sustained and successfully conducted by Periyar E.V. Ramasamy.

Important events related to movement:

- The Vaikom movement consists of day-to-day protests, arrests, of inquiries, jail terms and agitations.
- There was also the support of the higher castes for a 13-day march to the capital. A resolution was introduced in the Assembly in support of the free entry to the streets around the temple (Sanchara). But it was defeated.
- Mahatma Gandhi arrived to negotiate between the government, protesters and orthodox Hindus. Since Mahatma Gandhi insisted that it should be a local protest, requests to make it a pan--India movement failed.
- The traditionalists caused many troubles for the satyagrahis. It included counter rallies marked by violence. The resolution for the right to sanchara was defeated in the Assembly by the open support of the traditionalists. They were backed by the government and the administration.
- Tamil Nadu played a pivotal role in Vaikom Satyagraha. Periyar and Kovai Ayyamuthu, a firebrand leader, worked in tandem with leaders in Kerala. But they faced repressive action.

How did the movement conclude?

- The movement ended on November 23, 1925. The 19 leaders, including Periyar, Kesava Menon and T.K. Madhavan, was released on August 30, 1924.
- The rally by the upper castes that began on November 1, reached Trivandrum on November 13, submitting its memorandum to the Queen regent.
- Mahatma Gandhi held talks with the Queen of Travancore, social reformer Narayana Guru, traditionalists and police commissioner W.H. Pitt.
- On November 17, the satyagrahis announced their decision to withdraw their protest. On November 23, the government of the Travancore princely state declared that people could enter three of the four streets around Vaikom temple.

Uttaramerur Inscriptions

News: Recently, the Prime Minister of India referred to the Uttaramerur inscription in Kanchipuram, Tamil Nadu, while discussing India's democratic history.

About:

- The famous inscription from **Parantaka I's** reign is found on the walls of the **Vaikunda Perumal Temple**.
- The inscription gives details of the **functioning of the local sabha**, i.e. the village assembly. A sabha was an assembly **exclusively of brahmans** and had **specialised committees** tasked with different things.

- The Uttaramerur inscription details how members were selected, the required qualifications, their roles and responsibilities, and even the circumstances in which they could be removed.

How were representatives appointed to the Sabha?

- There will be 30 wards. Everyone living in these 30 wards would assemble and select one representative for the village assembly.”
- It then goes on to describe what the **qualifications** for such a representative must be. These include ownership of a certain amount of land, having a house, being between the age of 35 and 70 and “knowing mantras and Brahmanas” (from the Vedic corpus).
- An exception can be made on land ownership if the person has learnt at least “one Veda and four Bhashyas”. One must also be “well-versed in business” and “virtuous”.

What factors were laid for disqualification of members?

- The inscription emphasises upon the **keeping of accounts** – any discrepancy can also disqualify members of the sabha.
- Committing any of the first four of the five ‘great sins’ (killing a brahman, drinking alcohol, theft and adultery), being associated with outcastes, and eating ‘forbidden’ dishes.

Saurashtra Tamil Sangamam

News: Nearly 3,000 people are expected to attend Saurashtra Tamil Sangamam.

Background:

- The festival aims to bring forward the traditional age-old ties and cultural links between two coastal States of Gujarat and Tamil Nadu.

What is Saurashtra Tamil Sangamam?

- Centuries ago, invasions between 600 and 1000 years ago forced numerous individuals to migrate from Saurashtra in Gujarat and establish new settlements in Tamil Nadu's districts around Madurai, now known as Tamil Saurashtrian.
- People of Gujarati origin have settled in various places in TamilNadu, such as Tiruchi, Thanjavur, Kumbakonam, and Salem, creating cultural connections between Gujarat and Tamil Nadu.

About the Festival:

- The festival aims to highlight the cultural diversity and strength of India and to reconnect people with pilgrimage destinations and cultural heritage.
- The event will be taken place at places like Somnath, Dwarka and the Statue of Unity at Kevadia.

Importance of Logo:

- It is a representation of the merging of the silk fabric expertise of the Tamil Saurashtrian people and the textile industry of Gujarat.
- The confluence of the two cultures is depicted through the **Somnath temple**, the place of origin of the Saurashtrians, and the **Meenakshi temple** near Madurai, where they settled.
- A young woman, posing in a dancing posture with dandiya (Gujarat)and bharatanatyam (Tamil Nadu), embodies the coming together of two art forms.
- The upper tricolour signifies the message of 'Ek Bharat Shreshtha Bharat,' while the blue colour on the lower side symbolises the merging of the two states with the sea.

Importance of Sangamam:

- It promotes **cultural Security** which is as important as other forms of security, such as border security, economic security. food security. social security.



- Cultural revival will also protect identity of the nation.
- Sangamam serves as a platform for the community to come together, socialise, and build a sense of community.

Global Buddhist Summit

News: PM Shri Narendra Modi inaugurated first Global Buddhist Summit on 20th April.

Background:

- The summit holds importance for India as a strategic card as well as The Dalai Lama was part of the summit and also spoke about how Buddhist teachings gave him courage to face Tibet's struggle.
- The summit was conducted by The Ministry of Culture + International Buddhist Confederation (IBC)
- **Theme** - "Responses to Contemporary Challenges: Philosophy to Praxis."
- The summit aims to enhance cultural and diplomatic relationships with other countries and mark the significance and importance of India in Buddhism, as Buddhism was born in India.



Importance of hosting the Global Buddhist Summit:

- Providing a platform for The Dalai Lama to speak on Tibet.
- India has shown it is committed for the Tibetan cause and is exerting pressure on China through Buddhism.
- India is leveraging its historical and cultural ties and using its deep rooted connection to Buddhism.
- Owning up its Buddhist legacy and using it as matter of diplomacy and turning India as a hub of Buddhist faith.

What are India's 3 decisive moves to counter China?

- Hosting the **Global Buddhist Summit**.
- India's engagement with Buddhist monks and scholar in **Zemithang**, Arunachal Pradesh. When Dalai Lama fled Tibet in 1959, his first stop was at Zemithang.
- Turning India into a hub of Buddhism through **The Buddhist Circuit**. There are plans to restore ancient Buddhist sites, sacred books.

Conclusion

- India is following a multi-pronged approach to protect Buddhism and at the same time countering China's moves.

Basavanna

News: Recently, Basavanna Jayanti was celebrated in Karnataka.

Who is Basavanna?

- Basavanna was born in 1131 CE in the town of Bagewadi in Karnataka, India was trained in Sanskrit and Vedas.

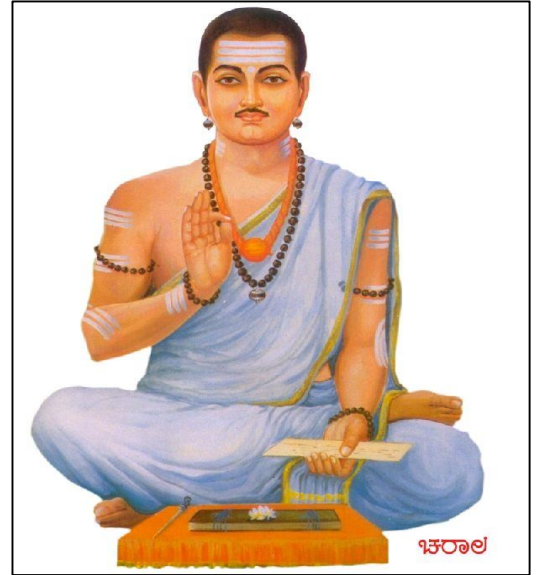
- However, Basavanna was disillusioned with the caste system and social inequality prevalent in Hindu society at the time. He rejected the traditional Brahminical practices and founded the **Lingayat sect**, which sought to **promote equality** and **social justice**.
- He was known for his practical approach and establishment of a “**Kalyana Rajya**” (Welfare state), which brought a new status and position for all citizens of society, irrespective of class, caste, creed, and sex. It is celebrated and held in high regard, especially by the Lingayat community.

What were his teachings based on?

- Basavanna's teachings were based on the principles of **Vachana Sahitya**, a form of Kannada literature that emphasized devotion to the god Shiva and rejected caste distinctions.
- He used poetry and music to spread his message, and his followers came to be known as **Sharanas or devotees of Shiva**.
- Advocated for a society free of the caste system, with equal opportunity for all, and preached about manual hard work.
- He also founded the **Anubhava Mantapa**. It was established as a common forum for discussing social, economic, political, religious, and spiritual principles, and personal problems. It is considered as the first Parliament of India.

What do we understand by the term ‘Lingayat’?

- The term Lingayat denotes a person who wears a personal linga, an iconic form of the god Shiva, on the body which is received during the initiation ceremony.
- The Lingayat community constitutes about 17 per cent of the population in Karnataka.



Bihu dance

News: Recently, Assam created history and marked its entry in the Guinness Book of World Records with more than 11000 dancers and drummers performing 'Bihu' dance and playing 'dhol' in a single venue.

Background:

- Bihu Dance is a folk dance form of Assam which is performed during the festival of Bihu.

About:

- The Bihu dance is known for its lively attributes of joy with quick movements. Performing dancers usually wear bright colourful traditional costumes. The red colour of the costume signifies fertility, ripe season and harvest.
- Bihu, which falls in mid- April is called Bohag Bihu or Rongali Bihu. Rongali Bihu marks the beginning of the Assamese New Year and the harvest and seeding season.
- Bihu dance is usually performed by men and women dancers whirling and spinning to traditional songs of Assam. With forming the groups, the Bihu dancers move and dance in circular directions, often clapping hands with enthusiasm and swinging the arms. They often jump while singing the cultural sagas.



Society

Mera Gaon Meri Dharohar program

News: Ministry of Culture has been documenting the unique cultural heritage of rural India under the National Mission for Cultural Mapping's 'Mera Gaon Meri Dharohar' program.

What is National Mission for Cultural Mapping?

- Approved by the Ministry of Culture in 2017, It looks to build a comprehensive database of artists, art forms, and other cultural resources from organizations. To preserve Indian art and cultural heritage, map the cultural canvas of India, and create cultural vibrancy throughout the nation.

Who is implementing it?

- The program was handed over to **Indira Gandhi National Centre for the Arts** (IGNCA) in 2021.
- IGNCA plans to cover all 6.5 lakh villages in the country and create short films on 6,500 village clusters showcasing their unique heritage.
- Data mapping, demography building, formalizing processes, and bringing all cultural activities under one umbrella for better results. Other related schemes - Kala Sanskriti Vikas Yojana, Scheme for Safeguarding the Intangible Cultural Heritage, and Ek Bharat Shreshtha Bharat.

About IGNCA:

- Established in 1987 as an **autonomous institution** under the Ministry of Culture. Aims to be a centre for research, academic pursuit, and dissemination in the field of arts.

List of villages identified under Mera Gaon Meri Dharohar

- Bishnoi village (famous for living in harmony with Blackbucks, Rajasthan); Uttarakhand's Raini village (famous for the Chipko movement) have been identified under Ecological Category.
- Modhera (Gujarat) is the first solar-powered village in India under Developmental category.
- Kandel (MP) is famous for 'Jal Satyagraha'; Suketi in Himachal Pradesh has Asia's oldest fossil park; and Pandrethan in Kashmir is the village of Shaivite mystic Lal Ded under Historical category.

Sangathan se Samridhhi

News: Recently, National Rural Livelihood Mission launches National Campaign "Sangathan se Samridhhi" to mobilize 10 Crore Rural Women into Self Help Groups.

About:

- The campaign has been launched under Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM).
- It seeks to empower marginalized rural households by bringing all eligible rural women into the fold of Self Help Groups(SHG).
- The campaign aims to bring 10 crore women under the purview of SHGs from the existing nine crore.
- The campaign will be organized in all states with the expectation of forming more than 1.1 lakh SHGs during the period through interventions like 1) organizing General Body Meetings of Village organization and experience sharing by SHG champions to motivate left out households to join SHGs, 2) training new SHG members, 3) reviving defunct SHGs, 4) opening SHG bank accounts among others.

Importance:

- Rural population accounts for 65% of India's total population. It is extremely important that women from these areas are empowered.
- DAY-NRLM has a vision that at least one-woman member from every rural household can join a Self Help Group and take advantage of the opportunities and financial support offered under the programme to improve their livelihoods.
- The government has set a target that every woman associated with SHGs should be able to earn one lakh rupees per annum. This will empower them and automatically have a considerable effect on the country's GDP.

Geography

PSC recommends Apex Body for Glacier Management

News: Recently, A Parliamentary Standing Committee in India has recommended the establishment of an overarching apex body for glacier management in the country.

What are Glaciers?

- Glaciers are massive bodies of slowly moving ice. Glaciers form on land, and they are made up of fallen snow that gets compressed into ice over many centuries. They move slowly downward from the pull of gravity.

Status of Glaciers:

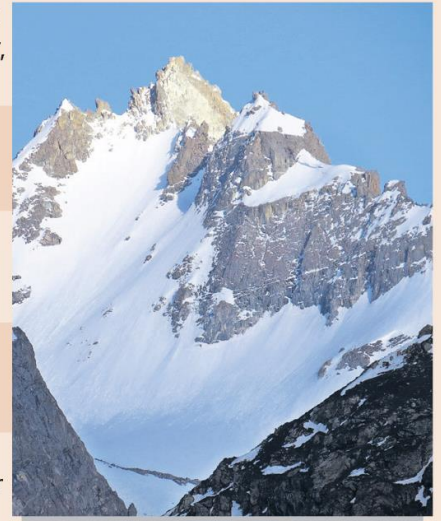
- Glaciers cover nearly 3% of Earth's surface and 11% of Earth's land area
- They are source of three large river systems - Indus, Ganges, Brahmaputra
- Hindu Kush Himalayan Region is known as the "Water Towers of Asia"
- Himalayan mountains are referred to as the third pole
- India has over 16000 glaciers

Threats faced by Glaciers in India:

- The majority of Himalayan glaciers are **melting** or **retreating**, which will severely affect flow in Himalayan River systems
- Melting glaciers can cause disasters like **Glacier Lake Outburst Floods (GLOF)**, **glacier avalanches**, etc.
- Melting of glaciers may lead to the **shift of tree lines** in the Himalayas and may also cause a change in the phenological behaviour of plants.
- Lack of data sharing on hydrological information with neighboring countries
- Multiple ministries/departments/institutions with different mandates for dealing with Himalayan glaciers

Critical importance of Hindu Kush Himalayas

- ▶ The Hindu Kush Himalayas span eight countries, from Afghanistan to Myanmar, and encompass over 4.2 million sq. km
- ▶ The mountains are the source of 10 major river systems in Asia that include the Indus, Ganga and Brahmaputra
- ▶ They sustain the livelihood of 240 million mountain dwellers and 1.9 billion people living downstream
- ▶ Of the eight countries, India has the highest population of 50.3 million distributed across its 11 mountain states
- ▶ Researchers warn of more political unrest in the region due to conflicts over natural resources, especially river water



Key Recommendations:

- Set up a single nodal agency for bringing out synergies among various government departments/ministries involved in glaciological research and monitoring
- Establish regional cooperation for the seamless sharing of hydrological information/data on glacier movement/behaviour
- Create a multi-hazard alert and warning system
- Increase involvement of Himalayan states, planners, scientists, and academicians in devising suitable measures for glacier management

Avalanche

News: India's Border Roads Organization said the tourists were hit by the avalanche near the Nathu La mountain pass in Sikkim state. State disaster response teams and the military were assisting in rescue efforts.

What is an Avalanche?

- An avalanche is a sudden, rapid flow of snow, ice, and debris down a mountain or slope.
- It can be triggered by various factors such as heavy snowfall, rapid temperature changes, or human activity.

- There are 3 types of Avalanches – Rock Avalanche, Ice Avalanche, Debris Avalanche.

Causes:

- **Heavy snowfall, rapid temperature changes**, strong winds, and rain can all contribute to avalanche conditions.
- The **steepness, orientation, and shape of a slope** can contribute to the likelihood of an avalanche occurring. Steep slopes with a convex shape are particularly prone to avalanches.
- Earthquakes, volcanic eruptions, and rockfalls can all trigger avalanches.
- The **structure and stability of the snowpack** can also contribute to avalanche conditions. Weak layers of snow or ice within the snowpack can cause it to collapse and trigger an avalanche.

How is Avalanche different from a Landslide?

Avalanche	Landslide
It is a rapid flow of snow, ice, and debris down a mountain or slope	It is a movement of rock, earth, or debris down a slope or cliff.
They usually occur in mountainous areas that have heavy snowfall and steep slopes.	Landslides can occur in a wide range of environments and can be triggered by various factors such as heavy rainfall, earthquakes, volcanic activity, or human activity.

Indus Water Treaty

News: The Indus Water Treaty (IWT) seems to be struggling to gain support in the J&K region.

Background:

- There is growing perception in the J&K region’s residents that the IWT prevents them from utilising their own water resources, significantly impacting the UT’s growth. This indicates the widespread resentment among the residents over the existence of IWT.

What are reasons for resentment?

Loss of water resources has had negative consequences on:

Agriculture

- Jammu and Kashmir’s economy is mainly dependent on agriculture. Nearly 70% of the people here depend on agriculture for their income, directly or indirectly.
- The UT’s irrigation system has merely improved over the years. In Kashmir, the primary irrigation method (canal) has seen a dismal development.

Power Generation

- The hydropower potential of the region has only partially realized.
- Of the potential hydropower capacity (20,000 MW), only 3,263.46 MW/19.80% have been used so far.
- IWT only allows for run-of-the-river projects that do not affect the riparian rights of Pakistan.

What do the residents demand?

- Abrogation of the treaty.
- Quantify the losses incurred to aid the UT in seeking compensation.

Conclusion

- The issue of IWT has been in spotlight recently due to India’s appeal to Pakistan to modify it, the people of J&K eagerly expect policymakers to pay attention to their concerns.

El Nino and the Monsoon

News: IMD predicts that El Nino this year is expected to strike late in August.

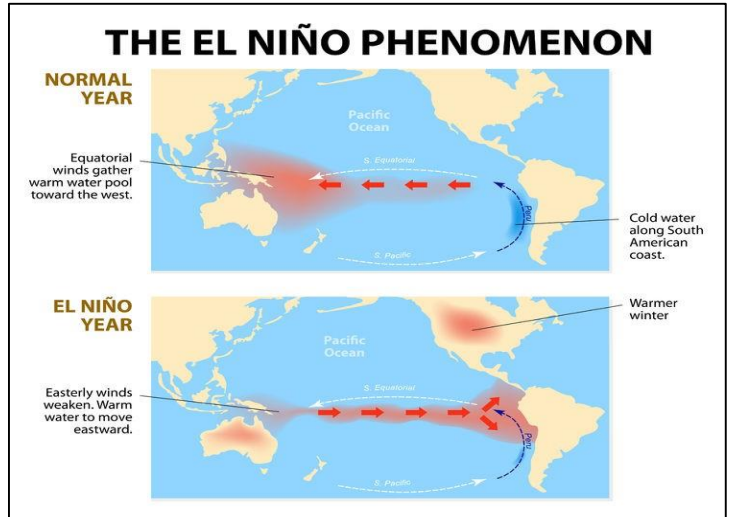
Background:

- India has had four consecutive years of good monsoons and overall rainfall from 2019 to 2022, helped by a prolonged La Nina event. However, this year could see an El Nino.

- In this context, we will understand El Nino, La Nina and its impact on India's weather, rainfall, agriculture and economy.

What is La Nina?

- La Niña basically refers to an **abnormal cooling** of the **central and eastern Pacific** Ocean waters **off the coasts of Ecuador and Peru**.
- Such cooling (Sea-surface temperature falling 0.5 Degree Celsius or more below a 30-year average for at least 5 successive 3 month periods) is a result of **strong trade winds blowing west along the equator, taking warm water** from South America towards Asia.
- The warming of the western equatorial Pacific, then, leads to increased evaporation and concentrated cloud-formation activity around that region, whose effects may percolate to India as well.



What is El Nino?

- During El Niño, the trade winds weaken or even reverse: Instead of blowing from east (South America) to west (Indonesia), they could **turn into westerlies**.
- As the winds blow from the **west to east**, they cause the masses of warm water to move into the central and eastern equatorial Pacific Ocean. The rise in SSTs there, thus, produces increased rainfall along western Latin America, the Caribbean and US Gulf Coast, while depriving Southeast Asia, Australia and India of convective currents.

What is Impact of El Nino on India? Does it lead to Drought?

- In 1997, India faced the strongest El Nino ever, but the monsoon was normal (A phenomenon of Indian Ocean Dipole IOD being the reason behind it)
- A slippage of one percentage point in monsoon rainfall will mean a below-normal monsoon.
- El Nino directly impacts India's agrarian economy as it tends to lower the production of summer crops such as rice, sugarcane, cotton, and oilseeds.
- While all drought years have invariably been El Niño years, the reverse doesn't hold true though.
- Droughts are no longer the disaster they used to be, thanks to a significant leap in farm productivity. The country's food output has risen sharply from about 50 million tonnes in 1950-51 to 323.5 million tonnes during 2022-23.

What needs to be done to be prepared for El Nino year?

- Experts have suggested that **early sowing** can lead to a large part of the harvest being normal.
- **Irrigated land** in India has jumped from 34.5% of sown area in 2013-14 to 45% in 2022. This has weather-proofed India's crops to some extent.
- The IMD is basically counting on El Niño's impact being neutralised by **"positive" Indian Ocean Dipole (IOD)** conditions developing during the season. To the extent a positive IOD — warmer temperatures in the Arabian Sea waters relative to that in the eastern Indian Ocean — cancels a weak El Niño, as it happened in 2006, the monsoon could well turn out "normal".
- The government must, to start with, keep a close watch on **wheat procurement**. If that is low, indicative of significant crop damage from the recent unseasonal rains, it should lose no time in **allowing imports**.



- Sophisticated weather models, proactive trade policy and improved irrigation, transport and other infrastructure should make it easier to deal with monsoon failures.

Inland Waterways in India

News: The government aims to develop the Eastern Grid with 5,000 km of waterways, announced Sarbananda Sonowal, Union Minister of Ports, Shipping and Waterways.

Background:

- The development of this grid will not only boost regional integration and accelerate development but it will further deepen eastern India's trade within BBIN countries (Bangladesh, Bhutan, India, Nepal).
- It will also further amplify trade potential with countries like Myanmar, Thailand, Malaysia and Singapore.

What are Inland waterways?

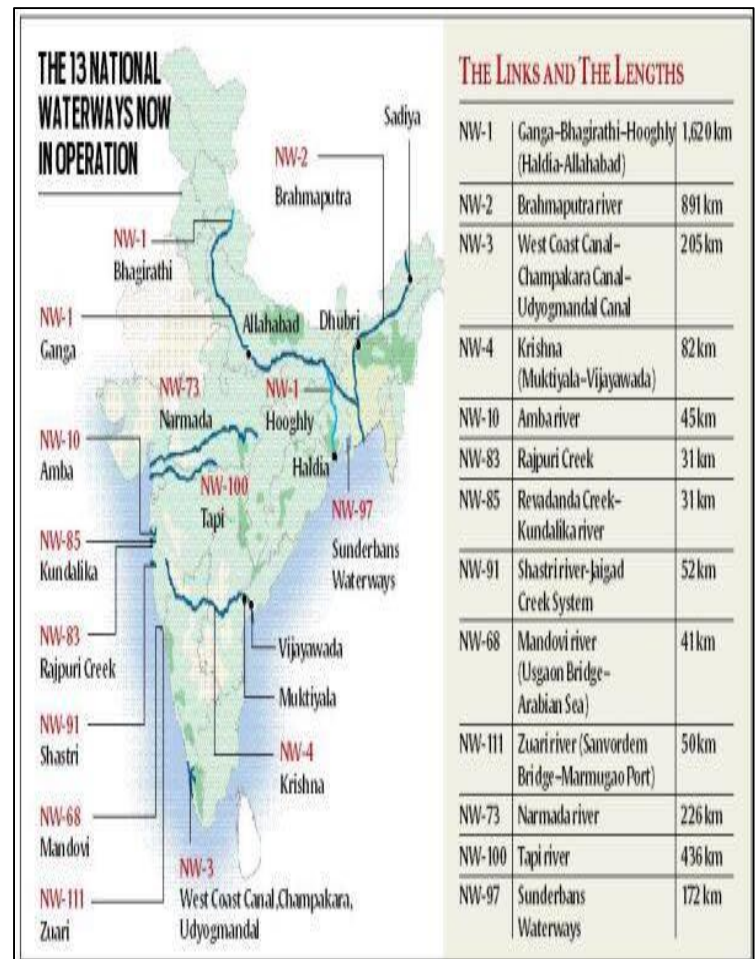
- An inland waterway is a navigable channel used to transport goods, materials, or other movable objects. Inland waterways consist of rivers, lakes, canals and backwaters. Rivers and lakes are natural waterways, whereas canals and backwaters are artificial.

What is the potential of Inland waterways in India?

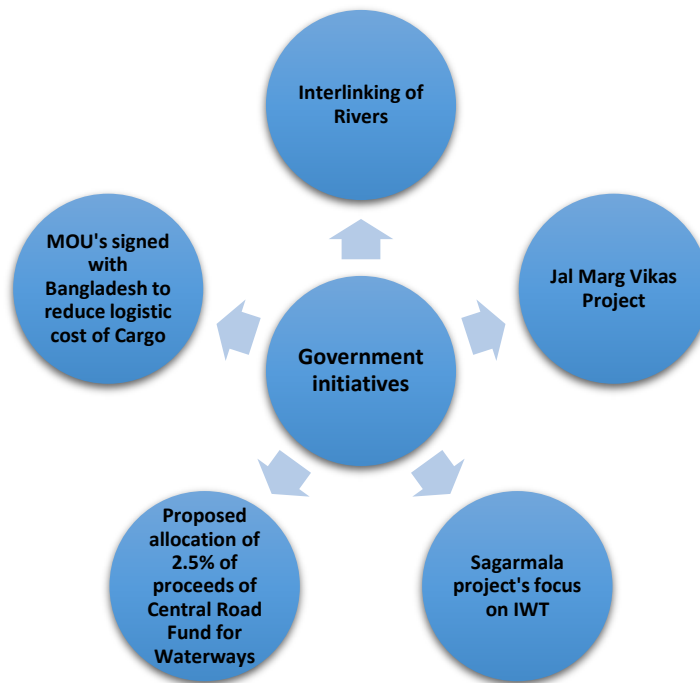
- As per the National Waterways Act, 2016, 111 National waterways have been declared.
- Inland Water Transport in India has only **0.5% of total transport**; compared to 42% in Netherlands, China 8.7%; USA 8.3% and Europe 7%. (Source: JalMargVikasProject)
- As per **Maritime India Vision (MIV) 2030 document**, cargo movement on National Waterways is targeted as 200 MMT by 2030 from current level of 83.61 Million Metric Tonne (MMT) during FY- 2020- 21.

What is the Jal Marg Vikas Project?

- The project is implemented by Ministry of Ports, Shipping and Waterways and Inland Waterways Authority of India with support from World Bank.
- It aims to develop the stretch between Varanasi to Haldia (on National Waterway 1) for navigation of large vessels weighing up to 1500-2000 tonnes.
- Multi-Modal Terminals are a part of Jal Marg Vikas project (JMVP).
- Haldia MMT is one of the three Multi-Modal Terminals being constructed on Ganga, 2 other MMTs constructed in Sahibganj and Varanasi under the project.



What are the government's initiatives?



What are benefits of Inland Waterways?

Capital Savings

- The capacity augmentation of navigation on NW-1 through the Jal Marg Vikas Project estimated to entail a capital expenditure of Rs. 2.53 crore per km only. Compared to this road and rail each cost over Rs 5 crore per km.

Cost saved in Transportation

- IWT would have positive impact on the overall logistics cost. For example, 1 Horse Power energy moves 150 kg on road, 500 kg on rail and 4000 kg on water.
- Thus, it will reduce per unit costs and also bring down logistics costs. Even, the National Logistic policy envisages to bring down Logistics cost to GDP from current 14-15% to 10% of GDP.

Environment Friendly

- Lesser fuel consumption per ton km which will result in fewer CO₂, Sox, NO_x, Particulate Matter emission. Switching to IWT will ensure lesser burden on road and rail transportation.
- LNG/CNG engines have lower noise level than diesel engines, hence less impact on ambient noise level.

Boost to regional trade

- IWT give boost to trade between India and Bangladesh, India and Myanmar through Kaladan project.

Boost to Connectivity

- It help create seamless interconnectivity connecting hinterlands along navigable river coasts and coastal routes. Further, riverine routes are likely to play a crucial role in connecting the north-eastern states to the mainland.

Other benefits

- Inland Waterways hold huge potential for domestic cargo transport, cruise, tourism and passenger traffic.
- Development of inland waterways will help in the generation of job opportunities

What are the challenges?

- Inland waterways have low transport speed thus not suitable where time is an important factor
- Limited area of operation depending on infra premises, connectivity, depth or river water.
- Perception of IWT investment as high risk investment has deterred private sector from participating and investing in it and traditionally banks have avoided sanctioning loans to such projects as well.
- Development of modern-day multimodal terminals, jetties, ferry points and river information systems is highly capital intensive.

- Dredging operations will damage river bed, and can lead to change in habitats for various aquatic flora and fauna. Dredging may also impact aquifers along the river, damaging the ability of water to percolate underground.
- Ecological impacts can have implications for livelihoods of people dependent on the rivers and creeks. For example: impact on fishing community, people dependent on riverbed cultivation. Displacement is another major concern as land is needed for number of facilities like ports, jetties, and other infrastructure.

Way Forward

- Strengthening public-private partnership has the key role to play in developing the inland waterways sector.
- Measures should be taken to develop basic infrastructure, address technological bottlenecks and maintenance of rivers to ensure year-round navigability
- Ensure seamless connectivity, develop Multimodal infrastructure and make inland water transport economically more viable.

Flash Droughts and Climate Change

News: A recent study found that flash droughts occurred more often than slower ones in tropical places like India, Southeast Asia, sub-Saharan Africa and the Amazon basin.

What is a Flash Drought?

- Flash drought is the rapid onset or intensification of drought. It is set in motion by lower-than-normal rates of precipitation, accompanied by abnormally high temperatures (heat waves), winds and radiation.
- They generally occur during warm seasons and tropical/humid places are more vulnerable.

What are factors that causes Flash Drought?

- Flash drought can be caused due to climatic patterns, such as El Nino (in Asia) and La Nina (eastern Pacific) events.
- Higher temperature increases evapotranspiration
- If not predicted early enough, changes in soil moisture can cause extensive damage to agriculture, economies, and ecosystem goods and services.

Why are humid tropics more susceptible to Flash droughts?

- The wet seasons there are usually rainy enough to keep land and vegetation damp. But when the rains fail unexpectedly, the equatorial heat can desiccate the ground to devastating effect.
- Flash droughts occurred more often than slower ones in tropical/humid places like India, Southeast Asia, sub-Saharan Africa and the Amazon basin.

What are mitigation measures?

- Closely observing changes in the rate of evapotranspiration and soil moisture have been identified as key early warning indicators.
- Vulnerability mapping to help policymakers, and farmers plan in advance.

Heat Dome

News: In the past week places across the southwest and eastern parts of the United States recorded temperatures as warm as those seen in late June or early July, and the unusual warming was caused by a phenomenon known as 'heat domes'

What is a Heat Dome?

- A heat dome is a type of **high-pressure system** that forms **over a large area** in the atmosphere, and causes **extremely hot** and **dry weather** conditions.
- The system **traps hot air** and prevents it from flowing to rise and cool. This air then becomes **compressed** and **heats up**, leading to a **dome-shaped area of hot air** that can persist for **several days or even weeks**.

What causes a Heat Dome?

- A number of **meteorological elements** work together to create a big-high pressure system in the atmosphere.
- **Climate change** has also been identified among the contributing factors to the increased frequency and intensity of heat domes.
- The intensity and duration of a heat dome can also be influenced by other factors, such as the amount of moisture in the air and the presence of other weather systems.

Which places serve as favorable conditions for Heat Domes?

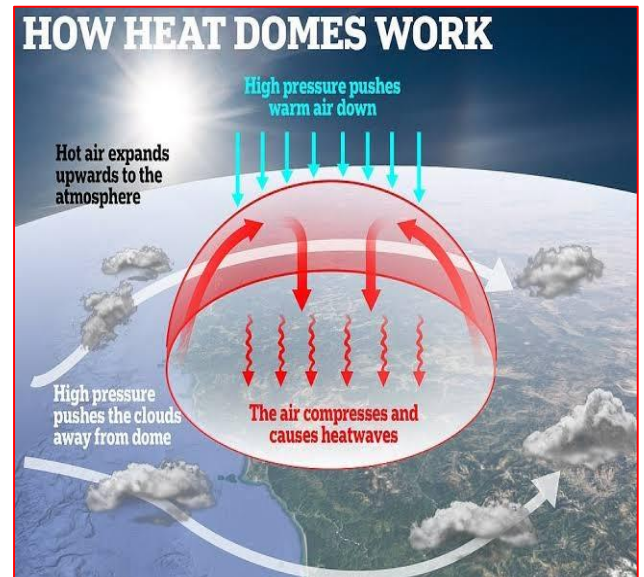
- Locations with a **lot of land** and relatively **dry air**, such as plains and deserts, serve as a favourable condition for heat domes to form as well.

How does Heat Dome impact the world?

- It can have significant impacts on human health, particularly vulnerable populations such as elderly individuals, children and those with pre-existing health conditions that can be aggravated by extreme heat.
- People who work outdoors – Construction workers, farmers, agricultural workers are at increased risk of heat related illness.
- Droughts and wildfires are some of the most devastating bearings due to the hot and dry conditions, paired up with reduced rainfall and increased evaporation rates.

How to combat Heat Domes?

- **Reducing greenhouse emissions** – Transitioning to renewable energy sources, improving energy efficiency and promoting sustainable transportation.
- **Investing in green infrastructure** – Parks, green roofs, tree planting (Especially in cities)
- **Building codes and standards** can help ensure that new buildings are designed to withstand extreme heat and maintain indoor comfort during heat waves.
- **Reducing heat-trapping surfaces** - Cities can take steps to reduce the amount of heat-trapping surfaces, such as **asphalt** and **concrete**, which can exacerbate the urban heat island effect.
- **Educating the public** about the risks of extreme heat and how to stay safe during heat waves can help reduce the incidence of heat-related illness and mortality.



General Studies - 2

Polity and Governance

India needs public policy education

News: Even though good public policies spur economic growth, and public welfare and improve the ease of living for citizens, there is little interest in public policy education in India.

Need for Public policy education

- Most executive jobs in the organised sector are in government/government-owned agencies and require an understanding of public policy and public administration/public management.
- In spite of talent in Indian bureaucracy, governance is still perceived to be lagging behind private sector management in terms of efficiency and effectiveness.
- It is primarily due to a lack of training in public management as policymakers are under-equipped to develop effective policies.

Why is public management a neglected field in India?

- Inadequate formal education in public management as compared to business management education (there are ~3,182 institutions). Only ~130 public, private and not-for-profit universities offer public administration programmes and only 29 institutes offer public policy programmes.
- Very few jobs are available for people pursuing such courses is main reason why universities don't have many programmes in public management. Therefore, neither educational institutes nor students find any incentive to prefer public management courses.
- Very few civil servants have had exposure to public management before joining the service. Also, there are a few opportunities for in-service officers to study public management in India and abroad.

Suggestions:

- Public management should be one of the compulsory subjects for the UPSC civil service examination. This will help –
- It is preferable for civil servants to have formal education in public management before they enter service.
- There is need to create an opportunity or incentives for universities and private institutions to offer the subject at the graduate or PG level. It will help students become better citizens as well as effective private sector managers.
- The existing training institutions of the government should have a larger component of public policy as part of induction training.
- The government can create certain specialized positions for public policy analysts to create new job avenues for the graduates of public policy programmes.

Lokayukta

News: The Kerala Lokayukta, has referred a case related to alleged nepotism and anomalies in the Chief Minister's Distress Relief Fund (CMDRF) to a three-member full bench for investigation.

What is Lokayukta?

- It is an anti-corruption authority. The object of Lokayukta system in a state is to make investigation of grievances, allegations against public servants.
- In India, the **Administrative Reforms Commission**, (1966-70), had recommended the creation of the Lokpal at the Centre and Lokayukta in the states.
- Before the passing of the Lokpal and Lokayuktas Act in 2013, several states in India passed laws for creating the Institution of 'Lokayukta'. **Maharashtra was first** to act in this regards with its Lokayukta body established in 1971.

Who appoints Lokayukta and what is the tenure?

- The lokayukta and upalokayukta are appointed by the **Governor** of the state. While appointing, the governor in most of the states consults (a) the chief justice of the state high court, and (b) the leader of Opposition in the state legislative assembly.
- In most of the states, the term of office fixed for lokayukta is of 5 years duration or 65 years of age, whichever is earlier. He is not eligible for reappointment for a second term.

What are issues related to Lokayukta?

Absence of clear legislation

- The Lokpal and Lokayuktas Act 2013 has **only one section on Lokayukta**, which mandates that states must pass the Lokayukta Act within one year and there is **no information** about their makeup, powers, or other features.
- States, in fact, have complete autonomy over how their own Lokayuktas are appointed, how they work, and under what conditions they serve.

Delay in resolution

- One of the major challenges faced by the Lokayukta is the delay in the investigation and resolution of complaints.
- The Lokayukta is also **dependent on the state government** for funding and infrastructure, which can lead to interference and lack of independence.

The majority of Lokpal and Lokayukta offices lack basic infrastructure

- The office has only been formed in 19 states, and the bulk of them are defunct.

No Independent agency and also states have discretion on Appointments of Lokayukta

- Lokpal is not immune to political influence because the appointing committee is made up of members of political parties.
- Lokpal's appointment can be manipulated as there is no criterion for determining who is an 'eminent jurist' or a 'person of integrity,' the appointment of Lokpal can be manipulated.

What is the way forward?

- Ensure Transparency in appointments to the Lokpal and Lokayukta.
- The ombudsman's institution should be reinforced in terms of functional autonomy and manpower availability to combat corruption.
- Greater transparency, access to information, citizen and citizen group empowerment, as well as good leadership willing to be held accountable to the public, are all essential.
- The Lokpal and Lokayukta Act should be amended to provide more powers to the Lokayukta, such as the power to investigate and prosecute cases of corruption against all public servants, including the Chief Minister and the judiciary.
- The Lokayukta should be made more accountable and transparent in its functioning. It should regularly publish reports on its activities, investigations, and outcomes.

India Justice Report 2022

News: According to the India Justice Report (IJR) 2022, **Karnataka** has achieved the top rank among the 18 large and mid-sized states in delivery of justice with populations over one crore. It was followed by Tamil Nadu (2nd), Telangana (3rd). UP was ranked lowest at 18th.

Who prepares IJR?

- First published in 2019, The IJR is an initiative of Tata Trusts in collaboration with Centre for Social Justice, Common Cause and Commonwealth Human Rights Initiative among others.

National Deficits



Judiciary

Judge vacancy

No court works with a full complement of judges except the High Court of Sikkim and the district courts in Chandigarh.

SC/ST/OBC

At the district court level **no state/UT could fully meet** all its Scheduled Castes, Scheduled Tribes and Other Backward Classes quotas. Data on SC/ST/OBC judges is not available for High Courts.

Case Clearance Rate

Among the 18 large and mid-sized states, **only Kerala could achieve case clearance rates of 100 per cent** and more at both High Court and subordinate court levels.

- It assesses the performance of states in terms of justice delivery, by considering several parameters such as police, judiciary, prisons, and legal aid to assess the overall performance of each state.

Key Findings:

- The Indian judiciary is facing a **severe shortage of judges and infrastructure**, leading to rising pendency, increasing caseloads, and declining case clearance rates (CCR) in lower courts. As of December 2022, the High Courts were functioning with only 778 judges against a sanctioned strength of 1,108 judges.
- The **number of cases pending per judge** is rising in most states over the last five years, while the sanctioned strength has remained the same. The average pendency in High Courts is highest in Uttar Pradesh (11.34 years) and West Bengal (9.9 years), while it is lowest in Tripura (1 year), Sikkim (1.9 years), and Meghalaya (2.1 years).
- The list of 7 Small States with a population less than one crore each, was topped by Sikkim which was ranked second in 2020. Sikkim has been followed by Arunachal Pradesh and Tripura. The State of Goa is at rank Seven which is the lowest.
- The **caseload per judge** has steadily increased, with the caseload per judge increasing in 22 states and Union Territories between 2018 and 2022.
- The **Case Clearance Rate (CCR)** in High Courts improved by six percentage points (88.5% to 94.6%) between 2018-19 and 2022 but declined by 3.6 points in lower courts (93% to 89.4%). High Courts are increasingly clearing more cases annually than subordinate courts. In 2018-19, only four High Courts had a CCR of 100% or more. In 2022, this more than double to 12 High Courts.
- Nationally, the **number of court halls** appears sufficient for the number of actual judges, but space will become a problem if all the sanctioned posts are filled. In August 2022, there were 21,014 court halls for the 24,631 sanctioned judges' posts, a shortfall of 14.7%.

Key Recommendations:

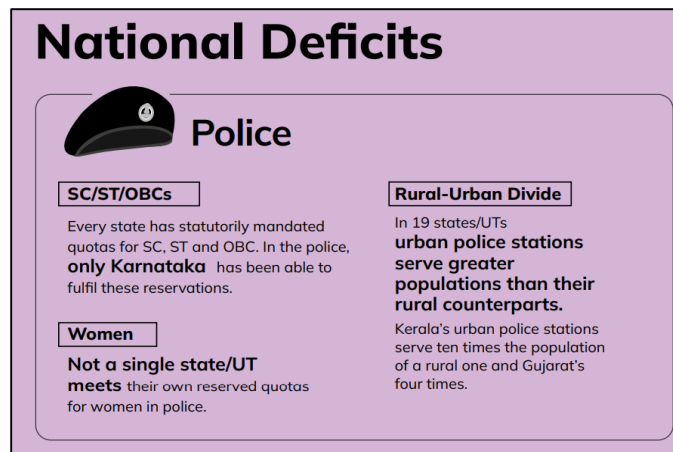
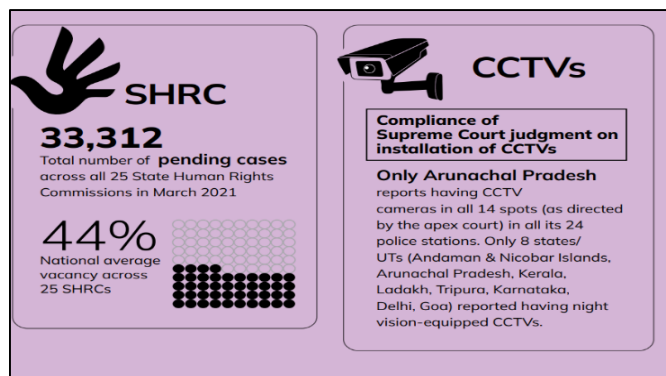
- Address shortage of judges by filling the vacant judge posts, provide adequate infrastructure and improve efficiency of judicial system.
- Improve police training, reduce overcrowding in prisons.
- Pay greater attention to the needs of victims of crime, including improving access to legal aid and victim compensation schemes.

SC says critical views on government policies not anti-establishment

News: Supreme Court lifts telecast ban on Malayam channel Media One; says unguided and ad hoc use of sealed covers infringe natural justice and open justice.

Background:

- The Ministry of Information and Broadcasting refused to renew the broadcast licence of the news channel on the ground that the Ministry of Home Affairs had declined (based on IB report) security clearance over alleged links with the Jamaat-e-Islami-Hind (JEIH).
- The channel approached the Kerala HC against the Centre's action, which had upheld the ban on the channel on the grounds of national security. The government is at liberty to decline to renew the permission granted without disclosing complete reasons for the non-renewal.
- The SC set aside the Kerala HC order and directed that the licence be renewed in four weeks' time.



What did the promoters of Media one had to say?

- The promoters argued that they were not given a chance to defend themselves as the national security reasons were submitted to the HC in a sealed cover (in the public interest).
- The fundamental right to freedom of speech and expression [Article 19(1)(a)], which includes press freedom, can be restricted under Article 19(2) and there was no allegation that the channel violated the Program Code.

What did the SC observe?

- The critical views about government policies cannot be termed anti-establishment. The use of such a terminology betrays an expectation that the Press must support the establishment. An independent Press is vital for the robust functioning of the democratic republic.
- The top court was critical of the sealed cover procedure adopted in the HC and the “cavalier manner” in which the Centre raised the claim of national security.
- It would be impracticable and unwise for the courts to define the phrase national security.
- National security claims cannot be made out of thin air and there must be material backing such inference.
- National security is being used as a tool by the government to deny people legal recourse which is not compatible with the rule of law.
- JEIH is not a banned organisations and it is unclear how links with the organisation would affect the sovereignty and integrity, security of the state, etc.

Restriction of freedom of expression

There are certain grounds on which the Constitution of India introduces restrictions. Article 19 (2) of Indian Constitution empowers the State to instill reasonable restrictions on the following grounds:

1. Security of the State;
2. Friendly Relation with Foreign States;
3. Public Order;
4. Decency and morality;
5. Contempt of court;
6. Defamation;
7. Incitement to offence;
8. Integrity and Sovereignty of India.

The Competition (Amendment) Bill 2023

News: Parliament has given its approval to the Competition Amendment Bill, 2023.

Background:

- It was introduced by the Ministry of Finance to amend the Competition Act, 2002 to bring it in line with the modern development of new technology and the digital market. In December 2022, the Bill was referred to the Parliamentary Standing Committee on Finance for further scrutiny.

What it seeks to do?

- It seeks to Amend Competition act, 2002
- Bring Competition law in line with new economic practices emerging in the country
- Incorporate best international practices
- it introduces a ‘leniency plus’ scheme to encourage entities facing cartel investigations to disclose information about other cartels

Decriminalization of Certain offences

- **Decriminalizes certain offences** in the act by changing the nature of punishment from imposition of fines to civil penalties.
- These offences include failure to comply with orders from CCI and Director general related to anti-competitive agreements and also abuse of dominant position.

Increases regulations of combinations based on ‘Value of Transaction’

Combination - It refers to mergers, acquisitions or amalgamation of enterprises

- Any transaction **exceeding ₹2,000 crore** would require **CCIs approval**, helping to bring acquisitions in digital markets (Big Tech firms) under it. For example, when facebook acquired whatsapp in 2014 it wasn't within the ambit of CCI as per the previous version of Competition Act, 2002.
- Also, the bill prohibits entering into a combination that may cause an appreciable adverse effect on competition.

Reduction in Time Limit for approval of Combinations

- It proposes to expedite CCI clearance of mergers and acquisitions to **within 150 days**, down from a maximum of 210 days now.

It broadens the scope of Anti-competitive agreements

Anti-competitive agreement - Anti-competitive agreements are any agreement for goods or services which has an appreciable adverse effect on competition in India and is therefore prohibited.

- As per the new Bill, even the **enterprises or persons not engaged in identical or similar businesses** shall be presumed to be part of such agreements if they actively participate in such agreements. Earlier, such entities were exempted.

Framework for Settlement and Commitment process in anti-competitive practices

- The bill provides a **framework for settlement and commitment** for faster resolution of investigations by CCI. The bill limits the time period for filing information on it to CCI to **three years**. This will lead to quick litigation with reasonable penalties.

Imposition of Penalties

- CCI can impose a penalty of **up to 10%** of a **company's average turnover** in the "relevant market.

"Turnover" will refer to the "global turnover derived from all the products and services by a person or an enterprise"

- Experts argue that this will lead to higher penalties for global multi-product companies. But, those in favor of amendments state that the penalties are based on 'abuse of dominance'. Dominance of big companies per se is not bad!

Important terms used in Bill

- **Hub and Spoke Cartels** - Entities not engaged in similar businesses but have influence. The amendment broadens the scope of 'anti-competitive agreements' to catch entities that facilitate cartelisation even if they are not engaged in identical trade practices.
- **Gun Jumping** - It refers to the illegal practice of prematurely disclosing information or completing a transaction related to a merger or acquisition before the transaction has been fully approved by regulatory authorities.
- **New Age Market** - New technology-enabled firms or new types of businesses, that are not under the preview of CCI

Way forward

- The Bill while giving more teeth to the CCI also seeks to facilitate ease of doing business.
- With the new changes, the Commission should be better able to manage certain aspects of the New Age market and make its operation more robust.
- Lastly, the CCI needs to be adequately staffed so that they can approve decisions in time bound manner to facilitate EODB.

IT Act (Amendment) Rules, 2023

News: The MeitY notified the IT (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules 2023.

Background:

- The amendment empowers the Union Government to designate an **official fact checker** for 'misinformation' and 'fake news'.

What does amendment say on 'Fake news'?

- The fact checking unit of the Press Information Bureau (PIB) will be notified as the official fact checker for the Union government. This unit has been demystifying whatsapp forwards and news articles on Central government schemes and departments for many years.
- Social media companies or internet service providers will lose the '**safe harbour**' protection under **Section 79A, IT Act** When i) a news is notified as fake and social media intermediaries do not take any action or ii) they don't have a grievance redressal officer for India or iii) don't address user complaint on time.

What are the pros of these amendments?

- Remove immunity of social media firms if they decide to continue publishing fake news.
- The fact-checking unit to be setup will provide a credible and independent approach as it will possess the required technical, journalistic attributes to verify the information.
- The Freedom of the press guaranteed under Article 19 (1)(a) comes with reasonable restrictions Article 19 (2).

What are cons of these amendments?

- It is against the **Shreya Singhal vs Union of India** (2015) verdict that provides clear guidelines for blocking content. As following the amendments, the government sets itself as judge, jury and executioner.
- **Without a right to appeal** or the **allowance for judicial oversight**, the government cannot sit on judgement whether any information is false or fake.
- The power of appointing a Fact checker in the hands of government **can be misused** to prevent legitimate questioning or scrutiny by media organisations.
- By threatening to remove platform's immunity the amendment intends to create a chilling effect on the fundamental right to speech and expression.
- Amendments were notified without consulting stakeholders/their views were not taken into account.

Conclusion

- What can be done is there must be a committee of independent experts and senior journalists to flag fake news content and with a provision of right to appeal.
- The implications of fake news cannot be taken lightly, but a system where government agency has power to take down content should not be at the cost of honest and critical opinions of the government decisions.

The IT (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2023

News: In context of implications of IT amendment act, 2023 on Online Gaming.

What are the amendments?

Determining the role and responsibility of Intermediaries

- To make a reasonable effort to not host/publish/share any online game that Can harm the user and has not been verified by an online gaming self-regulatory body.
- To ensure that no advertisement of a non-permissible online game is hosted on its platform.
- In relation to **online games involving real money**, their responsibilities include - The displaying of a mark of verification by the self-regulatory body, informing their users of the policy for withdrawal or refund of the deposit, Obtaining the KYC details of the users; and Not giving credit or enabling financing by third parties to the users.

Role of Government

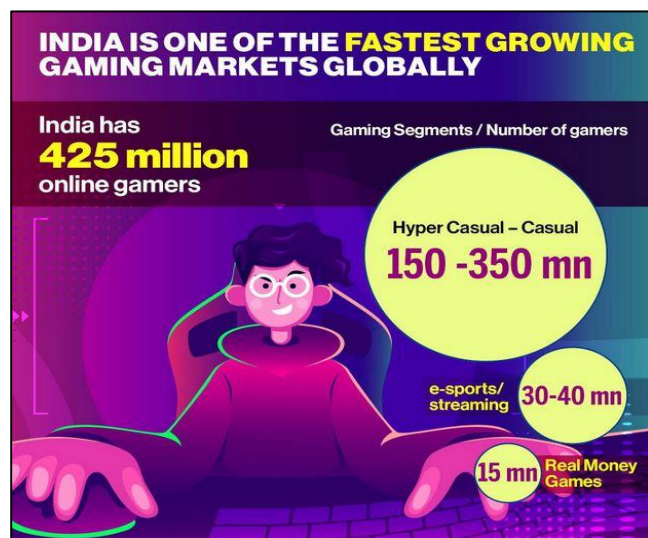
- It may notify multiple self-regulatory bodies, which shall be representative of the online gaming industry but function at arm's length from their members.

Duty/authority of self-regulatory bodies

- To inquire and satisfy itself that the online game does not involve betting/gambling on any outcome.
- To ensure that the online game complies with the rules/requirements under the law, including measures to safeguard through parental controls, etc.

When will the rules becomes applicable?

- The obligations become applicable once a sufficient number of self-regulatory bodies have been designated so that the online gaming industry has adequate time to comply



How will the amendments help?

- It will enforce greater due diligence by online gaming and social media intermediaries.
- Enable the Indian online gaming ecosystem to expand and grow and become an important catalyst to India's One trillion-dollar Digital economy goal by 2025-26.

Pre-Draft of NCF for Schools

News: The Ministry of Education (MoE) released a pre-draft version of the National Curriculum Framework (NCF) for School Education and has sought feedback from various stakeholders.

Background:

- The pre-draft was formulated by a committee led by K Kasturirangan, a former head of the Indian Space Research Organization (ISRO).
- As School education is the foundation stone of a child's life, the National Education Policy 2020 recommends – Shift from 10+2 structure to 5+3+3+4, Developmental perspectives suggest curricular and pedagogical shifts at foundational, preparatory (grade III, IV & V), middle and secondary stages.

What are the four sections of NCF?

- NCF for School Education
- NCF for Early Childhood Care and Education (Foundational Stage)
- NCF for Teacher Education
- NCF for Adult Education

What does the pre-draft say for NCF for School education?

- It covers the framework of curriculum for age groups 3 to 18 years and a key part of the document is the inclusion of values and their "rootedness" in India, in Content and learning of languages and Pedagogical approaches including tools and resources, etc
- It leans towards making students acquainted with true sources of knowledge – a philosophical preoccupation of ancient Indians. These sources focus on **Six Pramanas**



- It also focuses on **moral development** of a child which will be carried out through **Pancha Kosha Vikas** (5-fold development) - annamaya kosha (physical layer) pranamaya kosha (life force energy layer), manomaya kosha (mind layer), vijnanamaya kosha (intellectual layer) and anandamaya kosha (inner self).

- It focuses on teaching the concepts of different religious and philosophical traditions, including Buddhism, Jainism, and Vedic philosophies, to promote cultural diversity and interfaith understanding.
- It proposes that explicit tests and exams are not suitable assessment tools for children in classes up to 2 and recommends introducing written tests only from class 3 onwards to avoid imposing additional burden on the child.
- For **Grade 10 certification**, students will have to take two essential courses from humanities, maths and computing, vocational education, physical education, arts education, social science, science, and other interdisciplinary areas.
- In **Grades 11 and 12**, students will be offered choice-based courses in the same disciplines for more rigorous engagement. This phase of the Secondary Stage would be divided into semesters and each choice-based course would be for a semester.
- Students must complete 16 choice-based courses to complete Grade 12.
- **Modular Board Exams** will be offered as opposed to a single exam at the end of the year, and the result will be based on the cumulative result of each exam. Currently, the life-determining board examinations are available only on two occasions (grade 10 and 12), which prevents truly holistic development of students.

It has suggested 3 approaches to assessments

- **'of learning'** (measurement of achievement of student learning),
- **'for learning'** (evidence of student learning gathered by the teacher that provides inputs to guide the teaching-learning processes) and
- **'as learning'** (when assessments are introduced as non-threatening tools for self-reflection and introspection).

National credit framework

News: The UGC has released the NCrF, which will allow students to earn educational credits at all levels, irrespective of mode of learning.

Instruction – The framework may seem to look tricky at first but if you read it twice you will be able to comprehend it clearly. Quote some examples from the article in steps taken to reform Education and link it with any question that asks your opinion on NEP 2020.

What is NCrF?

- The NCrF is a meta-framework that integrates the credits earned through school education, higher education, and vocational and skill education.
- It consists of three verticals - National School Education Qualification Framework (NSEQF), National Higher Education Qualification Framework (NHEQF) and National Skills Qualification Framework (NSQF)

What is credit and how do students earn them?

- Credit is the **recognition** that a learner has completed a prior course of learning, corresponding to a qualification at a given level.
- One credit corresponds to **30 notional learning hours** in a year of two semesters, and every semester, a student is required to earn a **minimum of 20 credits**.

What is school education as per NCrF?

- School education is assigned **Level 0 to Level 4**. When a student completes Class V, the student is placed at level 1. After completing middle school (Class VI to VIII), the student reaches level 2. Completion of high school (Class IX and X) corresponds to level 3, and Senior Secondary School (Class XI and XII) corresponds to level 4.
- A student earns a total of **160 credits** during the **entire schooling years**.

What is Higher education?

- Higher education levels start from Level 4.5 and end at Level 8.
- Every year, a student has to **earn 40 credits** to move to the next level, and by the end of a three-year bachelor's degree, the student will have earned **120 credits**.
- PhD is at level 8. When a student completes a PhD, the earned credits would be $8 \times 40 = 320$.

What about Vocational and skill education?

- Vocational and skill education is also spread from level 4.5 to level 8. So there is **equivalence** between general and vocational and skill education regarding credits earned at each level.
- This helps the students to **quickly move** from one education stream to another by having the equivalent levels and total credits corresponding to these levels.

Where will the credits be stored?

- The credits accumulated by each student shall be stored in the **Academic Bank of Credits (ABC) technology platform**. This can be used to store credits irrespective of the type of learning— academic, vocational, or experiential learning.

What flexibility does NCrF provide?

- NCrF enables students to **move from one education stream to another** by having equivalent levels and total credits corresponding to these levels.
- **For example**, an ITI pass-out (two years after Class X) along with an additional language course from NIOS attains equivalence of Class XII certificate along with ITI-National Trade Certificate, which will enable the students to join university like any other student who completed Class XII.
- This means the National Credit Framework (NCrF) provides a mechanism for integrating general academic education and vocational and skill education, providing seamless horizontal and vertical mobility between the two streams for lifelong learning.

What are other benefits?

- Students can obtain credits for their proficiency in diverse areas of the Indian knowledge system, including the Puranas, Vedas, and other related components.
- The NCrF supports educational acceleration for students with gifted learning abilities. It provides scope for crediting national/international achievers in any field, including but not limited to sports, Indian knowledge system, music, heritage, traditional skills, performing & fine arts, master artisans, etc.
- The **international equivalence** and **transfer of credits** shall be **enabled** through various **multilateral/bilateral agreements** between respective regulators of the countries concerned. **NCrF would lend credibility and authenticity** to the credits being assigned and earned under various programs in India, making these credits more acceptable and transferable internationally

Criteria's for defining 'National Party' in India

News: Recently, The Election Commission of India (ECI) recognised the Aam Aadmi Party as a national party while revoking the status of the All-India Trinamool Congress, The Nationalist Congress Party and the CPI.

What were the other decisions taken?

- It revoked the state party status granted to RLD in UP, while recognising NCP and TMC as state parties in Nagaland and Meghalaya respectively.
- It granted “recognised state political party” status to the Lok Janshakti Party (Ram Vilas) in Nagaland, etc.

What are criteria for defining National Party in India?

As per the **ECI's Political Parties and Election Symbols, 2019 handbook**, a political party would be considered a national party if:

- it is '**recognised**' in **four or more states**; or
- if its candidates polled **at least 6% of total valid votes** in **any four or more states** in the **last Lok Sabha or Assembly elections** and has **at least four MPs** in the **last Lok Sabha polls**; or
- if it has won **at least 2%** of the total seats in the Lok Sabha from not less than three states.

To be recognised as a state party, a party needs:

- **at least 6% vote-share** in the **last Assembly election** and have **at least 2 MLAs**; or have 6% vote-share in the last Lok Sabha elections from that state and at least one MP from that state; or
- **at least 3%** of the total number of seats or three seats, whichever is more, in the last Assembly elections; or
- at least one MP for every 25 members or any fraction allotted to the state in the Lok Sabha; or
- **have at least 8% of the total valid votes** in the last Assembly election or Lok Sabha election from the state.

What are the benefits given to recognised national/state party?

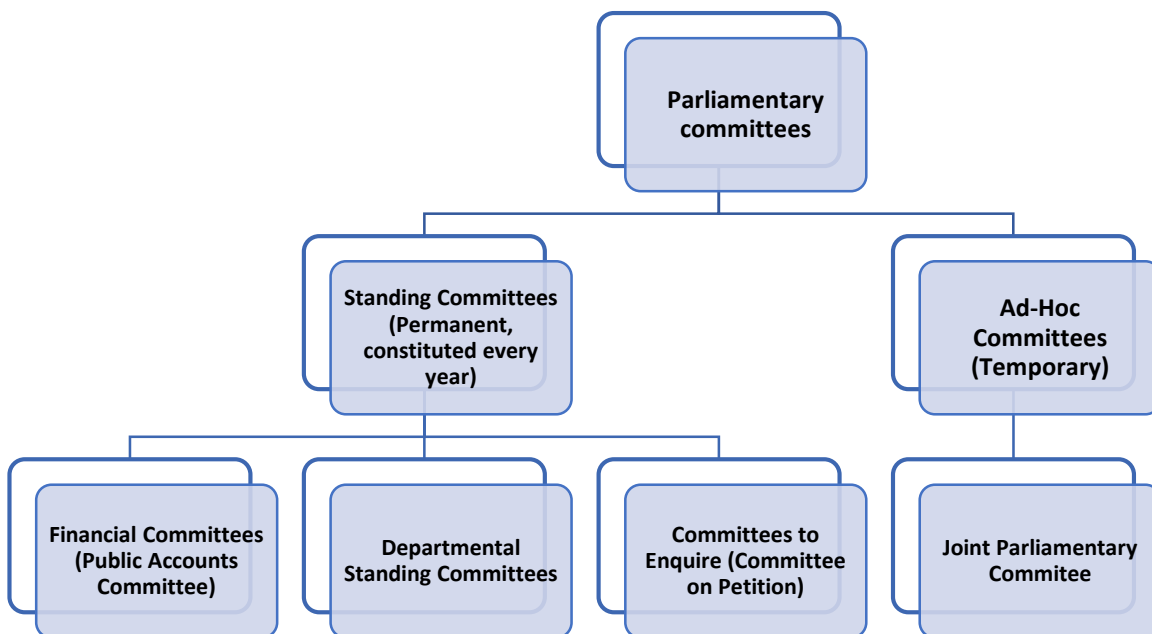
- It is entitled to exclusive allotment of its **reserved symbol** to the candidates throughout India (for the national party) in the State in which it is so recognised (for the state party).
- Need **only one proposer** for filing the nomination
- Entitled to **two sets of electoral rolls** free of cost at the time of revision of rolls.
- Their candidates get one copy of the electoral roll free of cost during the General Elections.
- They get **broadcast/telecast facilities over Akashvani/Doordarshan** during general elections.
- A recognized National or State party can have a **maximum of 40 “Star campaigners”** [registered unrecognised party – 20].

Role of Parliamentary committees

News: Parliamentary committees refer to the panels made up of MPs that are constituted to delve deeper into matters of public concern and develop an expert opinion.

What are Parliamentary committees in India?

- A committee appointed/elected by the House or nominated by the Speaker of Lok Sabha (LS) or the Chairman of Rajya Sabha (RS) and has a secretariat provided by the LS/RS.
- They work under the direction of the Speaker/Chairman, presenting their report to the House or to the Speaker/Chairman.
- The consultative committees, which also consist of members of Parliament, are not parliamentary committees as they do not fulfill certain requirements as mentioned above.
- Parliamentary committees draw their authority from **Article 105** (on privileges of Parliament members) and **Article 118** (on Parliament’s authority to make rules for regulating its procedure and conduct of business).



What is the role of Parliamentary Committees?

- They delve deeper into the details of a **specific piece of legislation** and analyse its potential impact on governance indicators and then make their recommendations (However, recommendations are not binding on the government).
- They act as a **mini-parliament** as they have MP’s representing different parties who are elected into them through a system of the single transferable vote, in roughly the same proportion as their strength in Parliament.
- They **ensure an oversight on the executive** as the government is required to table an ‘**Action Taken**’ report for the House to judge the progress made on the suggestions of the committee.

- Their reports create a **public record** of the consultations that took place and put pressure on the government to reconsider its stand on debatable provisions.
- As the discussions are **closed-door** and **away from the public eye**, the committee meetings are also **more collaborative**, with MPs feeling less pressured to posture for media galleries.
- They enable day-to-day functioning of Parliament in session. For example, the **Business Advisory Committee** prepares the entire schedule of both Houses when Parliament is in session.
- Importance of PSC can be observed based on the comprehensive work that has been seen in as far as Digital Data protection bill is concerned. For example, Right from The Puttaswamy judgement (2017) to the constitution of Justice Srikrishna Committee to the introduction of The Personal Data Protection Bill, 2019 and the **role of A Joint Parliamentary Committee** which has led to the New Draft Digital Data Protection Bill, 2022.

What are the challenges observed recently?

- During the course of the 17th Lok Sabha, **only 14 Bills** have been referred for further examination so far.
- As per data from **PRS**, as little as **25% of the Bills** introduced were referred to committees in the 16th Lok Sabha, as compared to 71% and 60% in the 15th and 14th Lok Sabha, respectively.
- The **declining trend of national legislation** being subjected to expert scrutiny.
- Political enmity and stalling of proceedings in the house as recently seen in Budget session (2023) of 17th Lok Sabha.

What is the way forward?

- **Strengthen the role of parliamentary committees** by giving them more resources, powers, and authority to hold the executive accountable.
- **Involve** Civil society, experts and all stakeholders in committee proceedings to ensure diverse perspectives. **For example**, participation of traders, businessmen and stakeholders was noteworthy during implementation of GST.
- The Parliament may also consider a **compulsory referral** (like the US) for the Bills that are tabled on the floor.
- Develop a culture of **bipartisan consensus-building** within committees.

Same-Sex marriage

News: A five-judge Constitution Bench headed by CJI D Y Chandrachud began hearing a batch of petitions seeking legal recognition for same-sex marriage.

Background:

- The court had referred the pleas to a Constitution Bench on March 13, saying questions of “seminal importance” were involved.
- A three judge bench headed by CJI earlier said the submissions related to an interplay of **constitutional rights** and **specific legislative enactments including the Special Marriage Act** on the one hand, and the **rights of transgender couples** on the other.

What are the main issues/arguments of petitioners?

- The right to adopt, or have children by surrogacy or assisted reproductive technology, and automatic rights to inheritance, maintenance, and tax benefits are available only to married couples.
- The petitioners have pointed out that they will not be able to avail of legally accrued benefits of laws such as The Transplantation of Human Organs Act, as it only allows near relatives to object to the use of a deceased’s body for therapeutic purposes or organ donation.
- By excluding same-sex couples from the realm of marriage, the law places a burden on same-sex couples that it is constitutionally impermissible. They argue by not allowing same-sex marriages they are deprived of acceptance, respect from the society.
- Equality is not achieved by the decriminalisation of sexuality alone. It needs to be expanded to other domains of life – workplace, home, public places.
- The petitioners have also sought for same-sex couples the benefits that legislation such as the Special Marriage Act, 1954, provide to opposite-sex couples.

- They have argued that non-recognition of same-sex marriage **violates** rights under **Articles 14** (right to equality before law), **15** (right against discrimination on grounds of religion, race, caste, sex, place of birth), **19** (freedom of speech and expression), and **21** (protection of life and personal liberty) of the Constitution.

What are the views of the centre?

- The centre argued that if the court allows same sex marriage, it would amount to the “**judicial creation** of a **social institution** called ‘**marriage**’ of a different kind than contemplated in the existing law”.
- Centre says only the legislature has the right to make such changes in the law.
- Marriage is not...confined to the private sphere. The regulation of marriage is very much an issue of acceptance by the society and as such ought to be debated only by the competent legislature.

What are earlier SC judgements that the petition refers to? (Remember the judgements and understand crux of it)

Judgements	Observation
Lata Singh vs State of UP (2006) Shafin Jahan vs Asokan KM (2018) KS Puttaswamy vs Union of India	An adult person has the right to marry a person of their choice under Article 21 . The rights of LGBTQ persons cannot be construed as being “so-called rights”, but are real rights founded on sound constitutional doctrine.
Navtej Singh Johar & Ors vs UOI	The members of the LGBTQ community are entitled to the “full range of constitutional rights including the liberties protected by the Constitution”. The choice of whom to partner, the ability to find fulfilment in sexual intimacies and the right not to be subjected to discriminatory behaviour are intrinsic to the constitutional protection of sexual orientation

Kesavananda – Case and its legacy

News: The seminal ruling in Kesavananda Bharati, in which the Supreme Court laid down the “**basic structure**” doctrine on the limits of Parliament’s power to amend the Constitution, completed 50 years on 24th April, 2023.

What was the Kesavananda Bharti case?

- **Key point of contention** – The extent of Parliament’s power to amend the Constitution.

What led to the Kesavananda Bharti case?

- In **I C Golaknath & Ors vs State Of Punjab & Anrs** (Feb 27, 1967), the Supreme Court reversed its earlier verdicts and ruled that Parliament cannot amend the fundamental rights guaranteed by the Constitution.
- Parliament responded by amending the Constitution to give itself the power to amend any part of the Constitution — and passed a law that it cannot be reviewed by the courts. This **scope of the power to amend** — especially when the **right to property** (which was a fundamental right at the time) was impacted by the land ceiling laws — was the central challenge in the Kesavananda case.
- In its majority ruling, the court held that **fundamental rights cannot be taken away by amending them**. It said that Parliament had vast powers to amend the Constitution, and upheld the land ceiling laws — but it **drew the line** by observing that certain parts are so **inherent** and **intrinsic** to the Constitution that even Parliament cannot touch it. The court ruled that in spirit, the amendment **would not violate** the “**basic structure**” of the Constitution.

Why has the Basic Structure doctrine been criticized?

- Diluting the principles of Separation of Powers
- Undermining the sovereignty of Parliament
- Vague and subjective form of Judicial review

How has the Supreme court invoked the Basic structure doctrine over the years?

- While the SC has invoked the doctrine **sparingly**, it has mostly struck down amendments where **judicial powers** have been curtailed.

- Since the Kesavananda Bharati judgment, the Constitution has been amended **more than 60 times**. In these five decades, the Supreme Court has tested **constitutional amendments** against the doctrine of basic structure in **at least 16 cases**.

Note - We will discuss some of the cases where the Doctrine was invoked and the amendments have been either fully, partially been struck down by the Supreme court. (They are important from both Prelims and mains perspective)

Case	Which amendment/clause were struck down?	Supreme Court's ruling
National Judicial Appointments Commission (NJAC)	The Constitution (Ninety-ninth Amendment) Act, 2014	It threatened " judicial independence ", which the court ruled was a basic feature of the Constitution.
Kesavananda Bharati Sripadagalvaru and Ors vs State of Kerala and Anr (1973)	Struck down a portion of 25th Amendment (1972)	Upheld the land ceiling laws but struck down portion of amendment which said if any law is passed to give effect to the Directive Principles" it cannot "be deemed to be void on the ground that it takes away or abridges any of the rights contained in Article 14, 19 or 31".
Kihoto Hollohan vs Zachillhu And Others (1992)	The Supreme Court upheld The Constitution (Fifty-second Amendment) Act that introduced the Tenth Schedule or the so-called "anti-defection law" in the Constitution	The only portion of the amendment that was struck down was the one that stated that the decisions of the Speaker relating to disqualification cannot be judicially reviewed .
Indira Gandhi v Raj Narain (1975)	It struck down The Constitution (Thirty-ninth Amendment) Act, 1975,	It was struck down as it barred the Supreme Court from hearing a challenge to the election of President, Prime Minister, Vice-President, and Speaker of Lok Sabha.
Minerva Mills Ltd vs Union Of India (1980)	It struck down a clause inserted in Article 368	There shall be no limitation whatever on the constituent power of Parliament to amend by way of addition, variation or repeal the provisions of this Constitution. (The SC struck down the clause which stated this)
L Chandra Kumar v Union of India (1997)	The SC struck down a portion of the 42nd Amendment.	The Supreme court ruled that the Administrative tribunals were no longer excluded from Judicial review by High courts.

Which Constitutional amendment was struck down on procedural ground and not on grounds of Basic structure doctrine?

- Case - Union of India vs Rajendra N Shah, 2021
- The court struck down a portion of The Constitution (Ninety-seventh Amendment) Act, 2011
- The amendment changed the legal regime for cooperative societies, and the court ruled that cooperative societies within a state, as opposed to inter-state, would fall under the State List, which means that a constitutional amendment relating to it must be ratified by half the states as prescribed in the Constitution.

Few Facts about Kesavananda Bharti case:

- CJI of India during the ruling – Justice S M Sikri

- The 68-day hearing is perhaps the longest in the history of the Supreme Court.
- 13 judge bench – Largest so far
- Kesavananda Bharati had been the head seer of the **Edneer Mutt** in Kerala's Kasaragod district since 1961.

SWAGAT initiative

News: PM Modi will address the 20th anniversary of the State Wide Attention on Grievances (SWAGAT) in Gujarat today via video conferencing.

What is SWAGAT?

- The scheme was started by PM Modi in April 2003 when he was the Chief Minister of Gujarat
- It was started to **bridge the gap** between citizens and the government by using **technology** to resolve their **day-to-day grievances** in a quick, and time-bound manner.
- **Over 94 per cent** of the grievances in the past twenty years have been solved through the programme.

How did it work?

- In this system, PM Modi on every fourth Thursday of the month at 3 pm would let applicants come face to face with him with their complaints, and the solution was found on the spot.
- The **main idea** behind this system was to bring **all stakeholders on the same platform**.
- The primary focus has been on the quality of outcomes and qualitative resolution of complaints.
- In 2008, Taluka SWAGAT and the District SWAGAT were launched to provide an efficient medium at grassroot level to resolve the issues.



National Medical Devices Policy 2023

News: Recently, The Union Cabinet has approved the National Medical Devices Policy, 2023.

Key objectives:

- Facilitating growth - The medical devices sector is a fast-growing sunrise sector in India with a 5% share in the global medical device market.
- Accelerated growth path with a patient-centric approach and to emerge as the global leader in the manufacturing and innovation of medical devices by achieving 10-12% share in the expanding global market over the next 25 years.
- Policy is expected to help the Medical Devices Sector grow from present \$11 Bn to \$50 Bn by 2030.
- Encouraging domestic investments and production of medical devices
- Promote the safety and efficacy of medical devices
- Provide support in training and capacity-building programs

Strategies to promote Medical Device sector:

- **Regulatory Streamlining** - Creation of a 'Single Window Clearance System' for Licensing of Medical Devices and enhancing the Role of Indian Standards like BIS and designing a coherent pricing regulation.
- **Enabling Infrastructure** - Establishment and strengthening of large medical device parks, clusters equipped with world class common infrastructure facilities in proximity to economic zones with requisite logistics connectivity as envisioned under the National Industrial Corridor Program and the proposed National Logistics Policy.

- **Facilitating R&D and Innovation** - Supporting investments through schemes and interventions like Make in India, Ayushman Bharat program, Heal-in-India, Start-up mission, and encouraging public-private partnerships.
- **Human Resources Development** - Skilling, reskilling, and upskilling of professionals in the medical device sector.
- **Brand Positioning and Awareness Creation**

Way Forward

- The policy is expected to provide the required support and directions to strengthen the medical devices industry into a competitive, self-reliant, resilient and innovative industry that caters to the healthcare needs of not only India but also of the world. The National Medical Devices Policy, 2023 aims to place the medical devices sector on an accelerated path of growth with a patient-centric approach to meet the evolving healthcare needs of patients.

Article 200 of Indian Constitution

News: Recently, the Supreme Court said that governors should clear bills passed by the legislative assemblies as soon as possible, as required under Article 200 of the Indian Constitution.

Background:

- The plea in the Supreme court was filed by the Telangana government seeking directions to the governor to clear ten bills passed by the state Assembly.

What powers does Governor get Article 200 of Indian constitution?

- It gives governors the power to either grant assent to a bill, withhold assent or reserve the bill for the president's consideration in certain cases.
- The governor may return the bill (if it is not a Money Bill) requesting the House/Houses to reconsider the bill.

What did Supreme court say?

- While referring to the first provision to Article 200 of the Constitution, the SC mandated that **Governors should not delay over Bills** sent to them for assent after they had been passed by Legislative Assemblies. They should be returned "**as soon as possible**". The expression "as soon as possible" in this article has significant constitutional intent and that constitutional authorities should keep this in mind.

What are recent issues?

- In **Kerala**, the Governor publicly announced that he would not give assent to the Lokayukta Amendment Bill and the Kerala University Amendment Bill.
- In a new constitutional development, the **TN Assembly** passed a resolution urging the President of India to fix a timeline for assent to be given to bills passed by the Assembly.

What makes the resolution by TN assembly bring a new constitutional development?

- **Article 355** of the Constitution says that it shall be the **duty of the Union** to ensure that the government of every State is carried on in accordance with the Constitution. This provision justifies the "invasion of the provincial field" by the Union government and the proclamation of the President's rule (under Article 356) in a State.
- If the governor **violates Article 200** and **sits on the bills indefinitely** (an option not given by the Constitution), the governor is creating a situation where governance of the state cannot be carried on in accordance with the Constitution.
- In such a situation, the government of the State has a constitutional duty to **invoke Article 355** and **request the President** to give suitable instructions to the Governor.

What are best practices overseas?

- In the **United States**, the President can refuse assent to a Bill, but if the Houses pass it again with two thirds of each House, the Bill becomes law.

- In **United Kingdom**, the veto could only be exercised on ministerial advice. Refusal of royal assent on the ground that the monarch strongly disapproves of a bill/ it was intensely controversial would be unconstitutional.

Way Forward

- The Founding fathers of constitution couldn't have visualized that the Governor would be sitting on bills indefinitely without taking any action under Article 200.
- The current issue requires a different framework within the ambit of the Constitution. Thus, The Supreme Court should set a **reasonable time frame** for Governors to act on a Bill passed by the Assembly in the interest of federalism in the country.

Same Sex Marriage – Centre's stance

News: The Centre's arguments in the SC covered issues from privacy to personal laws. Here are the six key points it raised.

Basis	Centre's Stance
Religious definitions of marriage	<ol style="list-style-type: none"> 1. Various religions have recognised marriage only between man and a woman. 2. The Special marriage act, 1954 was enacted to overcome some limitations of personal laws.
On 'Legitimate' interest of state	<ol style="list-style-type: none"> 1. The center cited several aspects of marriage which the state has regulated, such as age of consent to marriage, prohibition of bigamy, judicial separation, and divorce. 2. Thus, The state can claim legitimate interest to regulate, when to marry, how many times to marry, whom to marry, how to separate.
On The right to privacy	<ol style="list-style-type: none"> 1. The center submitted that consenting sex between two adults is in the sphere of privacy within the intimate zone. However, recognising the relationship between the very same two individuals as marriage falling in the public zone has a necessary and inevitable public element.
Parliament must decide	<ol style="list-style-type: none"> 1. The center has repeatedly said decision on same-sex marriage can only be made in Parliament. 2. There are a total 72 categories of genders falling within the LGBTQIA+ community. This would mean several permutations and combinations of marriage and fact specific peculiar problems arising therefrom.
On Interpreting the law	<ol style="list-style-type: none"> 1. The key argument of the Centre is that the Court cannot interpret the Special Marriage Act to include same-sex marriage in a meaningful way. 2. The Centre argued that the Court will have to examine the "entire architecture of the Act rather than examine a few words like husband, wife, etc.
Effect on Personal laws	The Centre argued that personal laws will inevitably be affected even if the Court only looks at the Special Marriage Act.

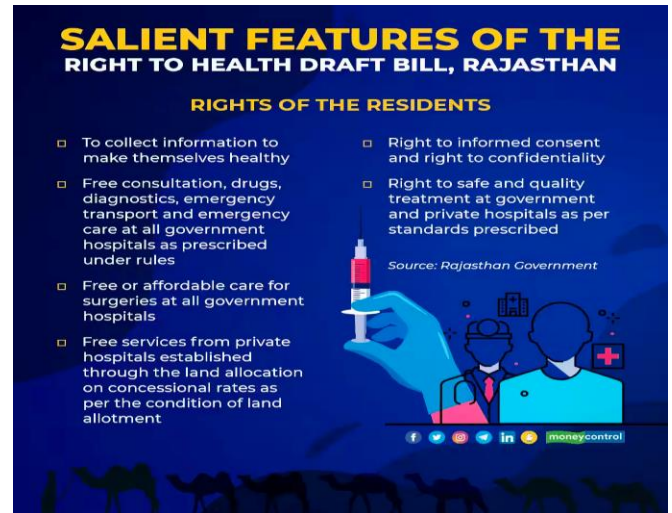
Social Justice

Right to Health Bill

News: The Rajasthan government has recently passed the Right to Health Act. This made Rajasthan the first state in India to pass the Right to Health (RTH) bill. But the doctors in the State are protesting and terming it as a 'draconian law'.

About:

- The bill allows free access to outpatient and inpatient services in all government and selected private hospitals in the state.
- Rajasthan's RTH is a legal entitlement for the patient which will prevent many doctors from extracting (not earning) money from patients
- Rajasthan has one of the highest incidences of violence against healthcare professionals in the country. Violence against healthcare professionals is due to mistrust between patients and doctors. The RTH bill will increase trust in the system, and ensure doctors work hand-in-hand with the poor and the have-nots.



Why are doctors opposing to the Bill?

- As per official data, more than 78% of healthcare in India is now delivered by private players. At this juncture, providing free emergency treatment and care will upset the entire private healthcare model foundation.
- Lack of clarity and mistrust in the functioning of system. There is no clear definition of what can be classified as a medical emergency. Bureaucratic and political control to admitting or reimbursing payment for patients.

Does the Indian Constitution guarantee Right to Health?

- The Indian Constitution **does not** explicitly talk about a right to health.
- A “**right to health**”, in theory, is derived from the right to life and liberty as guaranteed under **Article 21** of the Constitution.
- Previously, courts have highlighted the State's obligation to protect and promote the health of citizens, pointing to Constitutional provisions such as **Article 38** (promoting the welfare of people) and **Article 47** (which directs the government to meet the nutrition and health requirements of the population).

The State of World's Children 2023

News: The **UNICEF** released its global flagship report ‘The State of the World's Children 2023: For Every Child, Vaccination,’ highlighting the importance of immunization in children.

What is Immunization?

- The WHO defines immunization as “the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine.”

Key Findings:

- There is a decline in vaccine confidence globally.
- It was observed that around 67 million children missed out on vaccinations between 2019 and 2021. In 2022, the number of measles cases was more than double the total in the previous year.
- Inequity observed in access to vaccination. It was found that unvaccinated children often live in rural areas/urban slums.
- There is a growing threat of vaccine hesitancy due to factors such as access to misleading information and declining trust in vaccine efficacy.

India-specific observations:

- Between 2020 and 2021, the number of zero-dose children in India decreased from 3 million to 2.7 million. However, India was among the top 20 countries with the largest numbers of zero-dose children.

“Zero dose children” refers to children who have not received any vaccines at all or have not received any vaccines according to the recommended schedule for their age.

- 98% of the population in India currently perceive vaccines as important for children

Key Recommendations:

- India was able to bring down the number of zero-dose children due to sustained evidence-based catch-up campaigns (Intensified Mission Indradhanush (IMI), watchful work done ASHA workers and increased follow-up in routine immunization). Thus, evidence based catchup campaigns have helped.
- Increase the implementation of Immunization Agenda 2030 and Gavi Strategy 5.0 to promote equity and sustainably scale up immunization coverage.
- Rise in spending on immunization and health by investing in primary health care at the national level can help promote sustainable and equitable vaccine coverage.
- Demand for vaccination can be strengthened by talking to communities, tackling gender barriers, and rethinking accountability in health systems.
- Building of resilient and robust digital health infrastructure can help in the long run as observed in the case of India’s digital health platform Technology Enabled Community Health Operations (TeCHO+) and electronic vaccine intelligence network (eVIN) which has helped increase vaccination coverage.

World Development Report 2023

News: Recently, the ‘World Development Report 2023: Migrants, Refugees, and Societies’ was released by the **World Bank**.

Background:

- Annual report published since 1978
- It gives detailed analysis of a specific aspect of economic development.

Key Findings:

- Share of working age population will drop sharply in many developing countries.
- For example, Spain, with a population of 47 million, is projected to shrink by more than one-third by 2100, with those above age 65 increasing from 20 to 39% of the population.
- Majority of low income countries is projected to see increased population growth increasing pressure to create more jobs.

What are opportunities offered by migration?

- It can be a unique opportunity for economies and people as migrants transfer ideas, knowledge, and technology, which will increase job creation and modernisation – just as US Silicon Valley expatriates did when they helped nurture India’s IT sector.
- However, about 184 million people worldwide (including 37 million refugees) lack citizenship in the country in which they live.

What are steps recommended by government to promote migration?

- Origin countries should make labour migration an explicit part of their development strategy.
- Destination countries should facilitate their inclusion and address social impacts that raise concerns among their citizens.
- By combining “match” and “motive,” the framework identified policy priorities for countries.
- The “match” aspect is grounded in labour economics and focuses on how well migrants’ skills and related attributes match the needs of the destination countries while the “motive” refers to the circumstances under which a person moves in search of opportunity. This determines the extent to which migrants, origin countries and destination countries gain from migration: The stronger the match, the larger the gains.
- The report also recommended international cooperation and multilateral efforts to strengthen the match of migrants’ skills with the needs of destination societies.

State of World Population Report 2023

News: The State of World Population (SWP) Report 2023 by UNFPA reveals that India has just surpassed China as the most populous country, with a population of 142.86 crores compared to China's 142.57 crores.

About State of World Population Report:

- The State of World Population Report is an annual publication by **UNFPA**.
- The recent report highlights emerging issues in sexual and reproductive health and rights. By bringing these topics to the forefront, the report explores the challenges and opportunities they offer for global development.

About UNFPA:

- UNFPA is the United Nations sexual and reproductive health agency. Their mission is to deliver a world where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled.
- UNFPA is formally named the **United Nations Population Fund**. The organization was created in 1969, the same year the United Nations General Assembly declared "parents have the exclusive right to determine freely and responsibly the number and spacing of their children."

Key Findings of SWP report On India's population:

- India's population is projected to reach 142.86 crores by mid-2023, slightly surpassing China's 142.57 crore population.
- India's population growth has **slowed down** significantly in the past 10 years, with the total fertility rate (TFR) declining to 2 in 2020-2021 from about 3.4 in the early 1990s. A TFR of 2.1 is necessary for a country to attain population stability.
- **Two-thirds** of India's total population are **between the ages of 15 and 64**, which presents a **potential demographic dividend** if education, skill development, and opportunities are provided, particularly for youth from disadvantaged sections and women.
- India's population is forecast to grow to 1.67 billion in 2050 and peak at 1.7 billion in 2064 before settling at 1.53 billion in 2100, according to UN estimates.
- The report highlights that **population anxieties** have seeped into large portions of the general public, and in some cases, coercive methods have been introduced in family planning policies in certain states.

Key Findings (World specific)

- **44% of women** can't make choices about their reproductive health, contraception and whether to have sex.
- By 2050, eight countries will account for half of the projected global population growth. They are Democratic Republic of Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines, and Tanzania.
- Two-thirds of people live in countries with low fertility rates. **Europe** is the only region expected to experience an **overall population decline** between now and 2050.
- **African countries** have the **highest fertility rates**, including Niger, Chad, DR Congo, Somalia, Mali, and the Central African Republic.
- Territories with the lowest birth rates are Hong Kong, South Korea, Singapore, Macau, San Marino, Aruba, and China.

International Relations

Free and Open Indo-Pacific (FOIP)

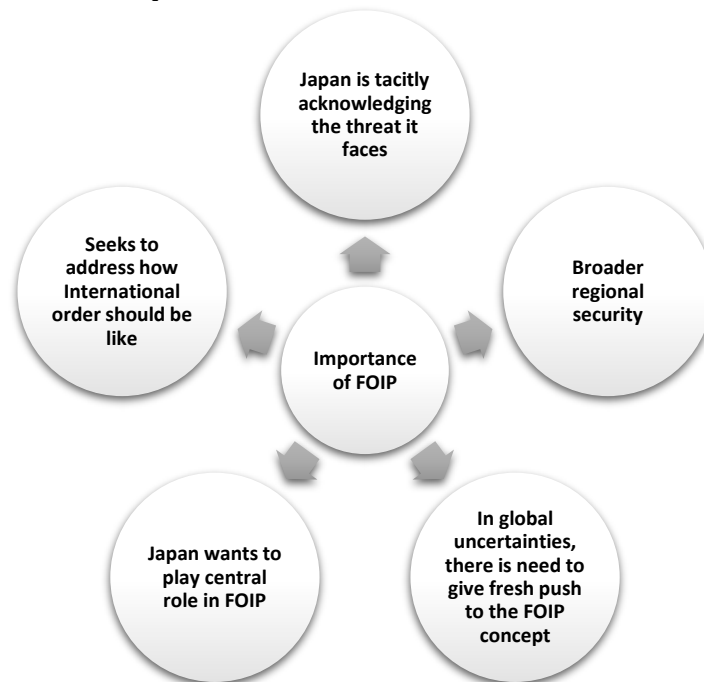
News: Recently, the Japanese PM during his visit to India unveiled Japan's New Plan for a FOIP and exchanged views about deepening the Japan-India Special Strategic and Global Partnership.

Background:

- Japan's FOIP emphasizes on the need to uphold the **rules-based order** and respect each other's **territorial sovereignty**, at a time when the international community is at a historical turning point.

What are the 4 pillars of cooperation under FOIP?

- **Addressing challenges in an Indo-Pacific way** - Incorporating realistic and practical projects in a wide range of areas, such as climate change, food security, global health and cybersecurity.
- **Principles for peace and rules for prosperity** - Japan wants to engage in economic development programmes such as the G-20 Principles for "Quality Infrastructure Investment".
- **Multi-layered connectivity** - The 3 areas identified for introducing more such projects are Southeast Asia, South Asia and the South Pacific/Pacific Island countries. Japan has made a new commitment of \$100 million towards the Japan-ASEAN Integration Fund and It will promote the Bay of Bengal-Northeast India industrial value chain concept in cooperation with India and Bangladesh, etc.
- **Extending efforts for security and safe use of the "sea" to the "air"** - Japan will help in strengthening the capabilities of maritime law enforcement agencies in other countries. Towards these objectives, Japan will implement the "strategic use of Official Development Assistance (ODAs)".
- Japan also announced to mobilise a total of more than \$75 billion in public and private funds by 2030 for infrastructure development.



India and Japan:

- In spite of some differences in the Ukraine conflict, Japan remains one of India's closest friends in Asia given their shared concerns over the aggressive Chinese activities.
- Japan's FOIP is more like India's concept of Indo-Pacific Oceans initiative which has seven pillars.
- Maritime Security, Maritime Ecology, Maritime Resources, Capacity Building and Resource Sharing, Disaster Risk Reduction and Management, Science, Technology and Academic Cooperation and Trade Connectivity and Maritime Transport.

Finland joins NATO

News: Finland became the latest member to join NATO after its application was ratified in record time.

What is NATO?

- NATO, or the North Atlantic Treaty Organization, is a **political** and **military alliance** consisting of **31 member countries**. It was formed in **1949** to promote mutual defence and collective security among its members.
- At present, NATO has 31 member countries. In 1949, there were 12 founding members of the Alliance: Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States. Since then, 19 more countries have joined the Alliance: Greece and Türkiye (1952); Germany (1955); Spain (1982); Czechia, Hungary and Poland (1999); Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia and Slovenia (2004); Albania and Croatia (2009); Montenegro (2017); North Macedonia (2020); and Finland (2023).
- HQ – **Brussels, Belgium**

Key provisions of NATO:

- **Article 5** - Article 5 of the NATO treaty is a key provision that states that an attack on one member is an attack on all members. This provision has only been invoked once, after the 9/11 terrorist attacks in the United States. However, NATO's protection does not extend to members' civil wars or internal coups.
- **Article 10** of the North Atlantic Treaty sets out how countries can join the Alliance.
- Article 10 states that membership is open to any "European State in a position to further the principles of this Treaty and to contribute to the security of the North Atlantic area".
- Any decision to invite a country to join the Alliance is taken by **the North Atlantic Council**, NATO's principal political decision-making body, on the **basis of consensus among all Allies**.

Impact of Finland joining NATO:

- Finland has gained better security, but it is losing out on significant trade and tourism revenue it was making from Russia, and its status as a confidence-building presence in the Baltic Sea and Europe at large is being threatened.
- For NATO, the addition of Finland brings in a military trained to repel an attack from Russia and strengthens its position to station weapons closer to Russia.
- However, Russia sees this as a dangerous historical mistake that could escalate the Ukraine conflict and has said it will strengthen its military capacity in its west and northwest.

India-Bhutan relations

News: Bhutan's King Jigme Khesar Namgyel Wangchuck recently visited India and met Indian President, Prime Minister and NSA discussing on a wide range of issues.

Instruction – Remember the names of Hydropower projects, rail-link projects and Indian state's bordering Bhutan.

About India-Bhutan Relations:

Historical and cultural relations

- The Indo-Bhutan Treaty of Peace and Friendship of 1949, is the bedrock of India and Bhutan's relationship.
- India also offers various scholarships for Bhutanese students through Nehru-Wangchuck Scholarships, Ambassador's Scholarship.

Economic relations

- India is Bhutan's largest trading partner. Also, increased trade with Bhutan benefits landlocked states like Assam and Arunachal Pradesh.
- Since the launch of the First Five Year Plan of Bhutan in 1961, India has been extending financial support to Bhutan's FYPs



- India has decided to support Bhutan's upcoming 13th Five-Year Plan (for 12 FYP, India had provided 4500Cr)
- India is also examining the possibility of setting up the first **Integrated Check Post** along the India-Bhutan border at Jaigaon and **expediting the proposed Kokrajhar-Gelephu rail link project**.
- Under Financial Cooperation or Integration, the first phase of the RuPay project was launched, India's Bharat Interface for Money (BHIM) was also launched in July 2021.

Strategic Interests

- Strategically, Bhutan acts as a **buffer zone** between India and China, protecting Siliguri Corridor (Also known as Chicken's neck)
- The **Doklam standoff** (2017) has re-established Bhutan's strategic significance for India.

Hydropower projects

- Four hydro-electric projects (HEPs)- **Chhukha, Kurichu, Tala** and **Mangdechhu** totaling 2136 MW are already operational in Bhutan and are supplying electricity to India.
- Two HEPs namely, Punatsangchhu-I, Punatsangchhu-II in Inter-Governmental mode are under various stages of implementation
- The two sides will also try to expedite negotiations on the reservoir-based **2,500 MW Sankosh hydel project**, which has been stuck for decades due to environmental and cost concerns.
- India has agreed to discuss buying power from the **Basochhu hydel project** that was built with Austrian support in 2008.

Co-operation in regional forums

- SAARC, BBIN, BIMSTEC

Grey areas in India-Bhutan Relations

- Bhutan is heavily dependent on India for its imports.
- Disputes over the exact demarcation of the border between the two countries.
- Concerns in Bhutan over environmental, social and revenue implications from hydroelectric projects with India.
- Bhutan has restricted the cross-border movement of Indian workers, citing concerns over the impact on Bhutan's culture and society.

President Xi's visit to Russia

News: Recently, The Chinese President was on state visit to Russia. It highlights the growing strategic partnership between China and Russia, which has significant implications for India.

What are recent developments?

- **Economic Ties** – In the aftermath of Russia-Ukraine war, Russia has increasingly relied on China for its economic ties. It is reflected in Russia's trade with China in the Chinese yuan which has multiplied by an extraordinary 80 times.
- **Political Ties** – Both the nations have united and launched scathing attack on United States and their way of interference in other countries internal matters. For example, in 2021, China and Russia issued a joint statement condemning the United States for its interference in other countries internal affairs.
- **Military Ties** - In November 2021, the two sides signed a Road Map for Military cooperation for 2021-2025 to guide collaboration in this sphere.
- **De-Dollarization** – Both the nations believe that global economic system is over-reliant on the US dollar and are looking to change this. They are also against the use of unilateral sanctions as a means of enforcing foreign policy.

What are the implications on India?

- The **strategic implication** is particularly in the **areas of defense and security**. India has been trying to counter China's growing military presence in the region, and a closer alliance between China and Russia could make this more difficult.
- One of the main implications of the growing relationship between China and Russia for India is the potential for **increased military cooperation** between the two countries. For example, the recent military exercises conducted by China and Russia in the Arctic region have raised concerns in India about the possibility of increased military cooperation between the two countries.

- China – Russia may look to work together on regional political issues, such as the ongoing conflict in Afghanistan. This could marginalize India’s influence in the region.
- Both the nations are in favor of using the Chinese yuan for settlements between Russia and the countries of Asia, Africa, and Latin America. This economic pact has raised concerns in India about the potential impact on its own economic growth and competitiveness.

What should India do?

- India should engage in **active diplomacy** with both China and Russia to strengthen its ties with these countries. This could involve high-level visits, cultural exchanges, and people-to-people contacts.
- India could work with China and Russia to promote **regional stability** and **connectivity** through the **SCO framework**.
- India should also focus on **strengthening its position in the region** by collaborating with other countries in the neighborhood. This could involve working on **regional initiatives** to promote peace, stability, and economic development. For example, India can work with Japan and South Korea to counterbalance the growing influence of China-Russia.
- India should also focus on **enhancing its economic ties with China and Russia**. This could involve exploring new trade and investment opportunities, as well as working on joint economic initiatives. For example, India, China, and Russia’s recent initiative to create a common digital currency could be beneficial in strengthening their economic cooperation.

Way Forward

- Adopt a proactive approach, strengthen ties with like-minded countries and ensure that India’s sphere of influence in its neighborhood isn’t lost. It is important that we secure our position and foothold in our neighborhood first, look for improving economic prospects and keep the diplomatic channels open for any possible co-operation.

The Belfast/Good Friday Agreement

News: The US President Joe Biden is set to visit Belfast, the capital of Northern Ireland, to mark the 25th anniversary of the Good Friday Agreement.

Background:

- President Joe Biden descended from Irish immigrants (second after John F Kennedy) and is vocally proud of his Irish heritage.

What is the Good Friday agreement?

- Signed on April 10, 1998, between factions of Northern Ireland and the governments of Britain and Ireland, to end 30 years of the violence known as ‘The Troubles’ in Northern Ireland.
- The Agreement has been hailed as a model deal to end long-standing conflicts and fetched a joint Nobel peace prize.

What were the ‘Troubles’?

- Northern Ireland was created in 1921 and in 1922 the rest of Ireland gained independence from the British (the today’s Republic of Ireland, with its capital in Dublin).
- Northern Ireland remained with the UK, but tensions simmered between those who wished to remain with the UK (Protestants) and those who wanted to join Ireland (Catholics).
- By the 1960s, the Protestants had become more powerful and the Catholics started facing discrimination. Subsequently, violence erupted between both factions – The Troubles, claimed the lives of more than 3,500 people.

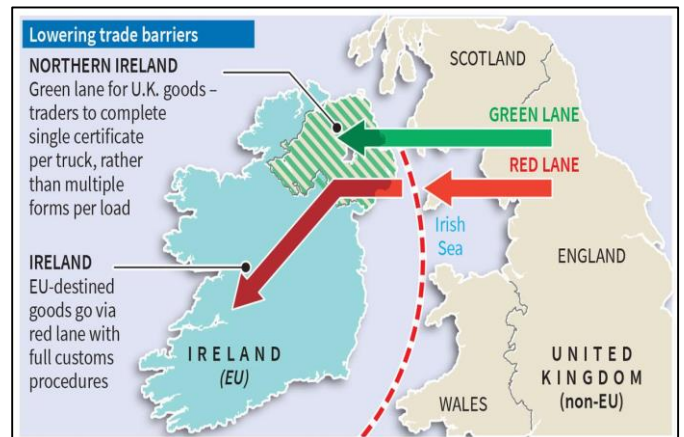
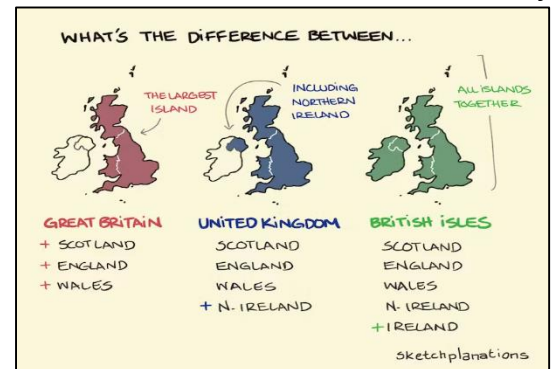


Figure 1 Windsor Framework

What were the terms of Good Friday agreement?

- Northern Ireland would continue to be a part of the UK.
- It could join Ireland if a majority of voters on both sides supported it in a referendum.
- People born in Northern Ireland could have Irish or British nationality or both.
- Northern Ireland would get a new government, which would have powers over local matters, while the UK government would look after security, foreign policy, tax laws, immigration rules, etc.
- On May 22 1998, a referendum was held in Ireland and Northern Ireland, and the agreement was approved by 94% of voters in Ireland and 71% in Northern Ireland.

What are the achievements of agreement?

- End to bloodshed, violence and restoration of peace.
- Although, Brexit has created an issue as Northern Ireland shares a land border with an EU country – Ireland. As the EU and the UK have different product standards, checks would be necessary for sending goods from Northern Ireland to Ireland.
- The MI5 (Britain’s intelligence agency) has recently raised the threat level in Northern Ireland from domestic terrorism to “severe”.
- Several pro-Union political parties in N. Ireland (like the DUP) started boycotting the agreement.

Mitigation measures:

- Checks would be conducted between Great Britain and Northern Ireland.
- The UK and the EU reached an agreement known as the **Windsor Framework** – which seeks to address the aforementioned disruptions to trade between Northern Ireland and the rest of the U.K.

India and EFTA

News: Recently, India and the four European countries that form the European Free Trade Association (EFTA) have expressed their willingness to resume their negotiations for a Trade and Economic Partnership Agreement (TEPA).

What is EFTA?

- It is an intergovernmental organization that was established in 1960 as an alternative trade bloc for those European states that were unable or unwilling to join the European Union (EU).
- EFTA comprises **Iceland, Liechtenstein, Norway, and Switzerland.**
- EFTA is **India's 9th largest trading partner**, accounting for about 2.5% of India's total merchandise trade in 2020-21.



What is TEPA?

- It aims to create opportunities for trade and investment between India and EFTA by eliminating/reducing tariffs and non-tariff barriers on a wide range of products.
- It aims to ensure fair and transparent market access conditions for service providers and investors and will enhance cooperation on intellectual property rights protection and enforcement.
- TEPA aims to facilitate trade procedures and customs cooperation along with effective mechanisms for dispute resolution.

What trade does it cover?

- Trade in goods, trade in services, investment, intellectual property rights, competition, government procurement, trade facilitation, trade remedies, dispute settlement, and other areas of mutual interest.

General Studies - 3

Economic Development

Foreign Trade Policy 2023

News: Recently, Ministry of Commerce and Industry launched the Foreign Trade Policy 2023, which will come into effect from April 1, 2023.

What is FTP 2023?

- A trade policy is a government policy that affects the number of goods and services a country exports and imports.
- FTP 2023 sets a **\$2 trillion target** for exports of goods and services by 2030 with a shift from incentives to remission and entitlement-based regime.

Aim of FTP 2023:

- To enhance the competitiveness of Indian exports in the global market (India's overall exports are about to reach US \$760 billion this year)
- Promote sustainable development of the country's trade sector
- Make India a leader in specific sectors such as pharmaceuticals, engineering goods, and textiles.
- To promote a digital economy and leverage technology to enhance the competitiveness of Indian exports.

Need for new FTP:

- India accounts for miniscule portion of Global trade (its share in global merchandise exports stands at around 1.8%, while that in services is roughly 4%)

Key approach of FTP is based on 4 Pillars:

- Incentive to Remission,
- Export promotion through collaboration - Exporters, States, Districts, Indian Missions,
- Ease of doing business, reduction in transaction cost and e-initiatives, and
- Emerging Areas – E-Commerce Developing Districts as Export Hubs and streamlining Special Chemicals, Organisms, Materials, Equipment, and Technologies (SCOMET) policy.

Main Features of FTP 2023:

Process Re-engineering and Automation

- The new policy focuses on export promotion and development through automated IT systems for various approvals, making it easier for MSMEs and others to access export benefits.
- This will facilitate participation of MSME's in global markets.

Towns of Export Excellence

- Four new towns (Faridabad, Mirzapur, Moradabad, and Varanasi) have been designated as Towns of Export Excellence (TEE) in addition to the existing 39 towns. The TEEs will have priority access to export promotion funds under the MAI scheme.
- It will boost the exports of handlooms, handicrafts, and carpets.

Recognition of Exporters

- Exporter firms recognized with 'status' based on export performance will now be partners in capacity-building initiatives on a best-endeavor basis.
- Similar to the 'each one teach one' initiative, 2-star and above status holders would be encouraged to provide trade-related training based on a model curriculum to interested individuals.
- Status recognition norms have been re-calibrated to enable more exporting firms to achieve 4 and 5-star ratings, leading to better branding opportunities in export markets.

Streamlining SCOMET Policy

- India is placing more emphasis on the "export control" regime as its integration with export control regime countries strengthens.

- There is a wider outreach and understanding of SCOMET among stakeholders, and the policy regime is being made more robust to implement international treaties and agreements entered into by India.
- A robust export control system in India would provide access of dual-use High end goods and technologies to Indian exporters while facilitating exports of controlled items/technologies under SCOMET from India.

Promoting exports from Districts

- The FTP aims at building partnerships with State governments and taking forward the Districts as Export Hubs (DEH) initiative to promote exports at the district level and accelerate the development of the grassroots trade ecosystem.
- It will help in identifying and promoting local products and services.

Facilitating E-Commerce Exports

- The FTP 2023 outlines the intent and roadmap for establishing e-commerce hubs and related elements such as payment reconciliation, bookkeeping, returns policy, and export entitlements.
- It will help Indian exporters tap into the potential of e-commerce exports and increase their global reach.

Facilitation under the Export Promotion of Capital Goods (EPCG) Scheme

- The EPCG Scheme, which allows the import of capital goods at zero Customs duty for export production, is being further rationalized.
- Prime Minister Mega Integrated Textile Region and Apparel Parks (PM MITRA) scheme has been added as an additional scheme eligible to claim benefits under CSP (Common Service Provider) Scheme of EPCG.
- Battery Electric Vehicles (BEV) of all types, Vertical Farming equipment, Wastewater Treatment and Recycling, Rainwater harvesting system and Rainwater Filters, and Green Hydrogen are added to Green Technology products – will now be eligible for reduced Export Obligation requirement under EPCG Scheme

Facilitation under Advance authorization Scheme

- Advance authorisation Scheme accessed by DTA (Domestic tariff area) units provides duty-free import of raw materials for manufacturing export items and is placed at a similar footing to EOU and SEZ Scheme.
- Special Advance Authorisation Scheme extended to export of Apparel and Clothing sector on self-declaration basis to facilitate prompt execution of export orders.
- Benefits of Self-Ratification Scheme for fixation of Input-Output Norms extended to 2 star and above status holders in addition to Authorized Economic Operators at present.

Amnesty Scheme

- Under the amnesty scheme, an online portal will be launched for registration and a six-month window will be available to exporters to avail the scheme.
- The one-time amnesty scheme aims at faster resolution of trade disputes.

Merchanting Trade

- Merchanting trade involves the shipment of goods from one foreign country to another foreign country without touching Indian ports, involving an Indian intermediary.
- Merchanting trade of restricted and prohibited items under the export policy would now be possible.
- It will help convert financial centres such as GIFT city etc. into major merchanting hubs as seen in places like Dubai, Singapore and Hong Kong.

Conclusion

- The new policy needs to be supplemented with other measures to boost the country's trade performance. These range from lowering import tariffs and ensuring a competitive exchange rate to signing broader and deeper free trade agreements.

Criticisms of Foreign Trade Policy 2023

News: This article is in continuation of recently covered FTP 2023 and highlights criticisms of the same.

What are main points citing issues with FTP 2023?

Basis of criticism	Description
On the lines of 1992 Foreign Trade Act	The FTP is notified by the Central Government under the Foreign Trade (Development & Regulation) Act, of 1992. However, this act still focuses on regulating and restricting trade, rather than facilitating it.

Lack of focus on Quality and Efficiency	It continues to rely on export incentives rather than improvements in product quality and production efficiencies, which are the new trade policy instruments.
Restrictions on the Directorate General of Foreign Trade (DGFT)	It still imposes import “prohibitions” or “restrictions” on the DGFT, instead of reducing its regulatory functions and making it a facilitator.
Inclusion of e-commerce	Sends wrong signals that India is ready to engage with WTO in this context.
Developing Districts as Export Hubs	The new policy lacks commitment and necessary efforts to support the infrastructure component of the programme to develop Districts as export hubs.
Failure to address weakness of RoDTEP Scheme	The scheme exempts or gives back the taxes and levies (levied on the exported products) to the exporters. It fails to address the lower-than-desirable rates of remission of duties under the RoDTEP scheme.

FAME II Scheme

News: Recently, the parliamentary standing committee on heavy industry highlighted that Phase 2 of the FAME scheme to subsidize electric vehicles has achieved only **51.96 per cent** of its target.

What is FAME scheme?

- FAME India is a part of the National Electric Mobility Mission Plan. The main thrust of FAME is to encourage electric vehicles by providing subsidies. The FAME India Scheme is aimed at incentivising all vehicle segments.
- Phase I of the scheme was started in 2015 and was completed on 31st March 2019. Phase II started from April 2019, and completed by 31st March 2022. (The Committee on Estimates (2022-23) for the evaluation of electric vehicle policy under the Union Ministry of Heavy Industries suggested an extension of the FAME II scheme)
- Technology covered under the scheme include - Hybrid & Electric technologies like Mild Hybrid, Strong Hybrid, Plug-in Hybrid & Battery Electric Vehicles.
- Emphasis on electrification of public transportation, including shared transport, in the FAME India Scheme.
- Incentives are applicable mainly to vehicles used for public transport or registered for commercial purposes.
- The benefits of incentives will be extended to vehicles fitted with advanced batteries like Lithium-Ion batteries.

Big Boost to Electric Cars
Scheme for FAME India Phase II Approved

CABINET DECISIONS
28 FEB 2019

- Encourage Faster adoption of Electric and hybrid vehicle by offering upfront **Incentive on purchase of Electric vehicles**
- To support **10 Lakhs e2-Wheelers, 5 Lakhs e3-Wheelers, 55000 4-Wheelers and 7000 Buses**
- About **2700 charging stations** will be established in a grid of 3 km x 3 km
- Outlay of **Rs. 10,000 crores** over three years

What issues were highlighted in committee report?

- Massive dependence on oil imports and Internal Combustion Engine (ICE) vehicles causes air pollution and greenhouse gases.
- Slow progress in both physical and financial targets.
- EV charging stations are sanctioned only for a few cities.

Suggestions given and lessons that we can learn from china:

- Boost charging infrastructure.
- The scheme should be extended further with new targets, incentives, and measures

- Place greater emphasis on implementation and extend the subsidy to private vehicles.
- China's experience with promoting electric vehicles (EVs) by offering generous subsidies in 2009, became costly for the government due to the large price differential and a number of buyers. So, it **phased out subsidies in 2020** and **imposed a mandate on car manufacturers** to ensure a **certain percentage of all vehicles sold** each year are **battery-powered**.
- To avoid financial penalties, manufacturers must earn a stipulated number of points based on range, energy efficiency, and performance.
- An academic paper published recently suggested that the **phase-out policy is the most cost-effective approach to promote EV sales** compared to other policies that provide larger subsidies over more extended periods.

Draft National Electricity Plan 2022-27

News: A new blueprint for the country's power sector planners – the National Electricity Plan for 2022-27 – marks a discernible reversal in the policy.

What is National Electricity Plan?

- The NEP is a crucial document that guides the development of the power sector in India. It is formulated by the Central Electricity Authority (CEA) every five years under the Electricity Act, 2003.
- The CEA formulates short-term (5-year) and prospective plans (15-year) to assess the demand for planning capacity addition and coordinate the activities of various planning agencies for the optimal utilization of resources.
- The NEP provides a review of the last five years (2017-22), capacity addition requirements for 2022-27, and projections for the period 2027-2032.
- The 1st National Electricity Plan was published in 2007, the 2nd in 2013, and the third (2018) includes the detailed Plan for 2017-22 and the perspective Plan for 2022-27.

Key Takeaways from National Electricity Plan for 2022-27:

- The fresh draft notes the **need for an additional coal-based capacity** of 28 GW by 2031-32, in addition to the 25 GW of coal-based capacity that is currently being built.
- A rise in the coal-fired power plants' plant load factor (PLF), from 55% in 2026-27 to 62% in 2031-32.
- It also highlights the need for significant investments in battery storage, with an estimated requirement of between 51 GW to 84 GW by 2031-32.
- It also emphasizes the challenges posed by the increasing reliance on renewables, which will require careful management and planning in the years ahead.

What marks a discernible reversal?

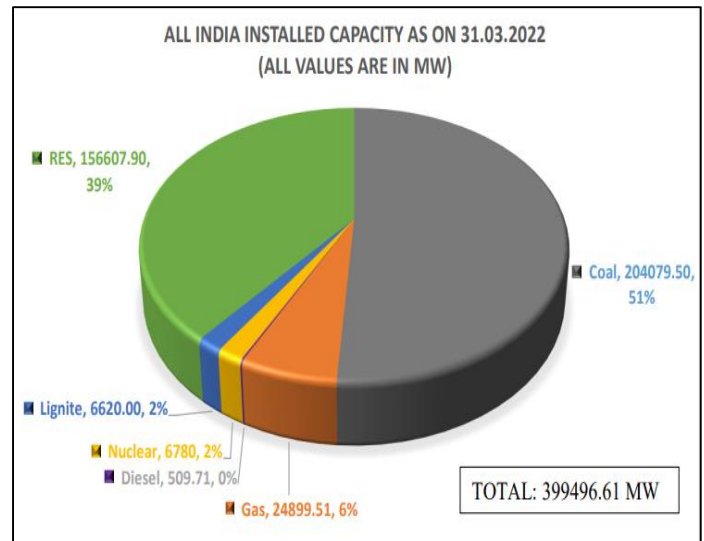
- The focus earlier was almost entirely on renewable energy for incremental capacity addition and fresh coal-fired capacity was virtually ruled out.

What are the challenges?

- India's fleet of coal-fired thermal power plants is over 25 years old and runs on outdated technology, which raises concerns about grid stability and power interruptions.
- Uncertainty regarding the management of the renewables-dominated grid infrastructure. For example, due to hydropower's and zero-inertia solar generators' slow development, the inertia that provides stability to the grid has been decreasing.
- There is no evaluation of the ramping rate for thermal plants under different solar generation scenarios. The ramping rate is the rate at which a power plant can increase or decrease its output. Without proper assessment, it could lead to issues such as overloading, underloading, or power interruptions.
- There is inadequate funding for the development of battery storage.

Way Forward

- Battery Energy Storage systems (BESS) based on Lithium-ion batteries offer a cost-effective solution to balance the grid against load fluctuations and intermittency in generation. The energy storage can provide energy time-shifting, allowing power to be used when it is needed rather than being wasted when it is generated.
- It is important to continue investing in the development of battery storage technology, as well as exploring new solutions such as water-based systems. This will help address the challenges outlined in the National Electricity Plan for 2022-27 and ensure a stable and reliable power supply in India.
- The hybrid generation models: This will enable a shift to solar energy and provide backup power.



Stand-Up India Scheme

News: On completion of 7 years of Stand-Up India scheme, the PM acknowledged the role that the initiative has played in empowering the SC/ST communities, women and job creation.

About:

- It was launched by Ministry of Finance on 5th April 2016 to **promote entrepreneurship at grassroot level** focusing on economic empowerment and job creation. This scheme has been extended up to the year 2025.
- It seeks to promote entrepreneurship amongst women, Scheduled Caste (SC) and Scheduled Tribe (ST) category.
- It **facilitates bank loans between Rs 10 lakh and Rs 1 Crore** to at least one SC/ST borrower and at least one woman borrower per bank branch for setting up a greenfield enterprise (the first-time venture) only. This enterprise may be in manufacturing, services or the trading sector.

How can bank loans be accessed?

- The scheme aims to encourage all bank branches in extending loans. The desiring applicants can apply under the scheme:
- Directly at the branch or, Through Stand-Up India Portal (www.standupmitra.in) or, Through the Lead District Manager (LDM).

Eligibility criteria for Loans:

- SC/ST and/or women entrepreneurs, above 18 years of age.
- Loans under the scheme are available for only green field projects.
- In case of non-individual enterprises, 51% of the shareholding and controlling stake should be held by either SC/ST and/or Women Entrepreneur.
- Borrowers should not be in default to any bank/financial institution.
- In any case, the borrower shall be required to bring in a minimum of 10 % of the project cost as own contribution.

Achievements of Scheme:

- Rs.40,710 crore has been sanctioned under Stand-Up India Scheme to 180,636 accounts in the last 7 years. More than 80% of loans given under this scheme have been provided to women.
- To extend collateral-free coverage, the Government of India has set up the Credit Guarantee Fund for Stand Up India (CGFSI).
- Awareness campaigns were organized including melas, financial literacy camps to promote the scheme.
- Hand-holding (pre and post-sanction of the loan) - Hand-holding of borrowers from the targeted community, CM helpline for query resolution (Burhanpur, MP), etc.

Nifty Reits and InvITs Index

News: Recently, India's first-ever Real Estate Investment Trusts (Reits) and Infrastructure Investment Trusts (InvITs) Index was launched by National Stock Exchange Indices Ltd, a subsidiary of the National Stock Exchange of India.

About:

- The index aims to track the performance of Reits and InvITs that are publicly listed and traded on the NSE.
- The weights of securities within the index are based on their free-float market capitalization, subject to a security cap of 33% each and an aggregate weight of top-3 securities capped at 72%.
- The index has a base date of 1 July 2019 and a base value of 1,000.
- The index will be reviewed and rebalanced on a quarterly basis.

Top Constituents:

- The top constituents of the Nifty Reits & InvITs index include Embassy Office Parks Reit, Powergrid Infrastructure Investment, Mindspace Business Parks Reit, and India Grid Trust.
- The index has 57.5% weight to Real estate, 35.6% to power, and 6.8% to services.

About Infrastructure Investment Trust:

- An InvITs is a **collective Investment Scheme** similar to a mutual fund, which enables direct investment of money from individual and institutional investors in **infrastructure projects** to earn a small portion of the income as a return.
- InvITs are listed on exchanges just like stocks — through Initial Public Offering (IPO).
- InvITs are regulated by the **Securities and Exchange Board of India (SEBI)** (Infrastructure Investment Trusts) **Regulations, 2014**.

About Real estate investment trust:

- REIT refers to an entity created with the sole purpose of channeling investible funds into operating, owning or financing income-producing real estate.
- REITs are modeled on the lines of mutual funds and provide investors with an **extremely liquid way** to get a **stake in real estate**.
- It is a type of security that provides all types of investors, big or small, with an outlet for regular income, portfolio diversification, and long-term capital appreciation. Like any other security, REITs can enlist themselves on a stock exchange.
- In India, the REIT were **introduced by the SEBI** in 2007.

RBI's Green Deposit Framework

News: The Reserve Bank of India (RBI) has announced a new framework to offer green deposits to the customers, aiming at developing a Green Finance Ecosystem (GFS) in India.

Background:

- The framework will come into effect from June 1, 2023.
- A green deposit refers to an **interest-bearing deposit** received by an **RE** (Regulated Entity) for a fixed period, with the proceeds earmarked for allocation towards green finance.

Rationale of Framework:

- The purpose and rationale for the framework, RBI said is to encourage REs to “offer green deposits to customers, protect interest of the depositors, aid customers to achieve their sustainability agenda, address greenwashing concerns and help augment the flow of credit to green activities/projects”.

Key Features:

- The framework is applicable to Scheduled Commercial Banks, including Small Finance Banks, excluding Regional Rural Banks, Local Area Banks and Payments Banks and all deposit-taking Non-Banking Financial Companies (NBFCs), including Housing Finance Companies.

- REs will be required to allocate the proceeds raised through green deposits towards a list of green activities and projects that encourage energy efficiency in resource utilization, reduce carbon emissions and greenhouse gases, promote climate resilience and/or adaptation, and improve natural ecosystems and biodiversity.
- To ensure effective allocation of green deposits, REs must put in place a **Board-approved Financing Framework (FF)**. The green deposits shall be **denominated in Indian Rupees only**.
- The allocation of funds raised through green deposits by REs during a financial year shall be subject to **independent third-party verification/assurance**, which shall be done on an annual basis.

What is the list of exclusion for RE?

- It includes projects involving new or existing extraction, production and distribution of fossil fuels; nuclear power generation; and direct waste incineration.
- Banks and NBFCs will have to put in place a comprehensive board-approved policy on green deposits.

Dabba Trading

News: Recently, National Stock Exchange (NSE) issued a string of notices naming entities involved in “dabba trading”.

What is Dabba Trading?

- Dabba trading is a form of informal trading that takes place outside the purview of the stock exchanges.
- In this practice, traders bet on stock price movements without incurring a real transaction to take physical ownership of a particular stock as is done in an exchange. This results in gambling centered around stock price movements, which is illegal and unregulated.
- It is recognised as an offence under Section 23(1) of the Securities Contracts (Regulation) Act (SCRA), 1956 and upon conviction, can invite imprisonment for a term extending up to 10 years or a fine up to ₹25 crore, or both.

What are concerns around Dabba Trading?

- Transactions are facilitated using cash and the mechanism is operated using unrecognised software terminals, which helps dabba traders escape taxation. The use of cash means that they are outside the purview of the formal banking system. It results in a loss to the government exchequer.
- It could potentially encourage the growth of ‘black money’ alongside perpetuating a parallel economy, which could lead to risks entailing money laundering and criminal activities.
- Being outside the regulatory purview implies that investors are without formal provisions for investor protection, dispute resolution mechanisms and grievance redressal mechanisms that are available within an exchange.

What can be done to prevent Dabba Trading?

- The Securities Contracts (Regulation) Act, 1956, already prohibits 'dabba trading' and provides for severe penalties upon conviction. However, strict implementation is missing.
- Financial regulators can conduct awareness campaigns and disseminate information about the risks associated with such trades.
- 'Dabba trading' is often facilitated through mobile apps and social media. Regulators can monitor these platforms and take action against those who promote or engage in it.

Status of Women in Agri-Food systems

News: Recently, the FAO (Food and Agriculture Organization) has released a report titled- “The Status of Women In Agrifood Systems” highlighting the importance of Gender Equality in the Agricultural Sector which can help reduce hunger, boost economy and fight adversity of climate change.

Background:

- It is the first of its kind since 2010 (State of Food and Agriculture (SOFA) 2010–11: Women in Agriculture – Closing the gender gap for development).

- It goes beyond agriculture to provide a comprehensive picture of the status of women working across agri-food systems.

Key Findings:

- Women account for 40% of global agricultural labor force but face **gender-based barriers** that limit their access to resources.
- Despite the importance of agri-food systems for women's livelihoods and the welfare of their families, women's roles tend to be **marginalised** and their **working conditions** are likely to be worse than men's — irregular, informal, part-time, low-skilled, labor-intensive and thus vulnerable.
- Women and girls face barriers and constraints that men and boys do not as a consequence of **rigid gender norms** and **roles**, unequal power dynamics and discriminatory social structures. These impediments to women's progress are compounded by the **additional challenges** posed by Climate, economic and price shocks, conflicts and the increasing risks of Gender-Based Violence.
- Even though women have gained more access to some resources (digital technology, financial services), **gaps are either unchanged or growing especially for rural women**. Since the outbreak of COVID-19, the gap between women's and men's food security has grown to 4.3%.

Key recommendations:

- **Closing the gender gap** in agri-food systems could increase agricultural productivity by up to 4% in developing countries, this will in turn increase GDP and result in poverty alleviation, improve food security.
- Women need **more access** to and control over the livestock, water, seeds, land, technology, and finance.
- **Eliminating discrimination** by engaging with men and boys.
- Gender equality in agri-food systems is essential for achieving the Sustainable Development Goals (SDGs), **particularly SDG 2**, which aims to **end hunger**, achieve food security and improved nutrition, and promote sustainable agriculture.
- It is important to achieve **SDG 5**, which aims to **achieve gender equality** and **empower all women and girls**.

Some India-specific findings:

- Female participation in the labour force is low (1 in 5 women are working or looking for a job) but labour-force participation is relatively high among the poorest women, who depend on agriculture.
- The female share of agrifood-system workers decreased by one percentage point between 2005 and 2019.
- A 10% increase in mechanized tilling between 1999 and 2011 led to a 5% reduction in women's farm labour with no increase in off-farm work because of limited off-farm opportunities for women.

World Trade Organisation

News: A WTO Panel has ruled against India in a dispute over **Information technology (IT) tariffs** with the European Union (EU) and other countries.

Instructions – The current issue is one of many that India has been dealing at WTO. It is important to understand crux of the issue and highlight it in your mains answers pertaining to issues in International bodies.

What is WTO?

- It came into being in **1995**. The WTO is the successor to the General Agreement on Tariffs and Trade (GATT) established in the wake of the Second World War.
- Its main purpose is to help trade flow smoothly, freely and predictably.
- It has 164 members, accounting for 98% of world trade.
- The WTO's rules – the agreements – are the result of negotiations between the members. The current set is largely the outcome of the **1986- 94 Uruguay Round** negotiations, which included a major revision of the original GATT.
- The WTO Secretariat → Geneva (Switzerland).

What is WTO ministerial Conference?

- It is the WTO's **top decision-making body** and usually meets **every two years**.

- All members of the WTO are involved in the MC, and they can take decisions on all matters covered under any multilateral trade agreements.

What is the current issue about?

- India has been looking to promote domestic IT manufacturing and reduce its dependence on imports, but this approach has been challenged by the EU and other countries, who argue that such measures are Protectionist and violate Global Trade Rules.
- In 2019, **the EU challenged India's introduction of import duties** of between 7.5% and 20% for a wide range of IT products, such as mobile phones and components, as well as integrated circuits, saying they exceeded the maximum rate.
- Additionally, Japan and Taiwan complained the same.

What was the ruling?

- The panel found that India's tariffs on certain IT products violated global trading rules, as they were found to be inconsistent with terms decided under **Information Technology Agreement**.
- The ITA is a global trade agreement that aims to eliminate tariffs on a wide range of IT products. India is signatory to the 1996 ITA.
- The ruling has highlighted the need for India to align its trade policies with global norms and obligations.
- It also **underscores the challenges** that developing countries like India face in balancing their domestic policy objectives with their international trade commitments.
- However, India argued that at the time of signing the ITA, products such as smartphones did not exist and hence, it was not bound to eliminate tariffs on such items.

What options does India have?

- India has a choice to appeal against the WTO ruling over IT tariffs, but if India Appeals the case will be held in **Legal Purgatory**. It is because the WTO's top appeals bench is no longer functioning due to the US opposition to judge appointments.
- Legal purgatory is used to describe a situation where a **legal case or dispute is in a state of limbo**, without resolution or a clear path forward.
- This situation can be particularly challenging for countries that are seeking to resolve trade disputes in a transparent and rules-based manner, as it undermines the effectiveness of the WTO's dispute settlement mechanism.

PM Mudra Yojana completes 8 years

News: The Pradhan Mantri Mudra Yojana (PMMY) was launched by the Indian government eight years ago to provide financial support and encourage self-employment among micro and small-sized enterprises.

Background:

- The Micro Units Development & Refinance Agency (MUDRA) was launched on April 8, 2015, by Prime Minister Narendra Modi to provide loans up to Rs 10 lakh to non-corporate, non-farm, small and micro enterprises.
- The loans are given under three categories: **Shishu** up to Rs 50,000, **Kishore** Rs 50,001 to Rs 5 lakh, and **Tarun** from Rs 5 lakh to Rs 10 lakh. Mudra loans do not require any collateral/security, and hence were perceived to be very risky

Need for Mudra Scheme

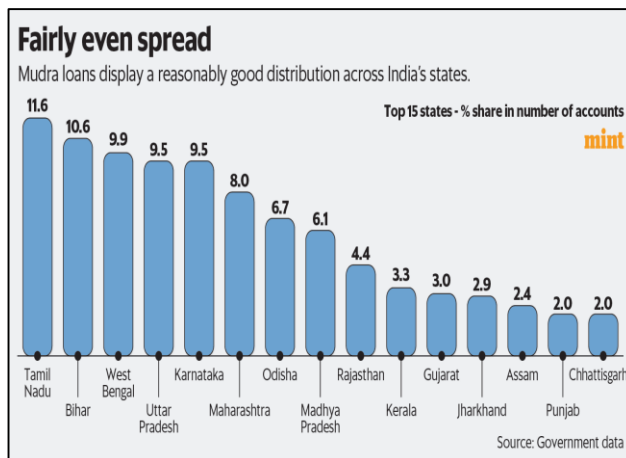
- Local/Small businesses/entrepreneurs in India face challenges in accessing credit from formal financial institutions due to factors such as lack of collateral or credit history. Mudra Yojana addresses the issue by providing collateral free loans.
- Small businesses in India are one of largest source of employment in country but they have potential to do even better. Mudra yojana helps small businesses avail loans and invest and expand their business and create more jobs.
- It promotes financial inclusion



- Women entrepreneurs often face significant challenges in accessing credit in India due to factors such as lack of collateral or social norms. The Mudra Scheme has a special focus on supporting women entrepreneurs, providing collateral-free loans and promoting greater gender equality in the economy.
- It promotes entrepreneurship as it emphasizes on first-time borrowers and startup's.

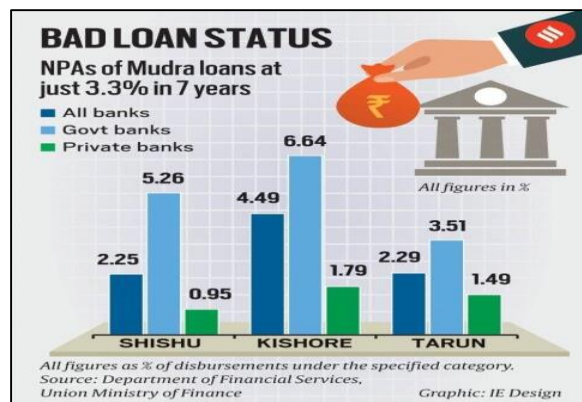
Performance of Mudra Yojana:

- According to the government, approximately 40.82 crores in loans totalling \$23.2 trillion have been sanctioned under the Pradhan Mantri Mudra Yojana (PMMY) since its start eight years ago.
- About 68% of accounts under the scheme belong to women entrepreneurs and 51% of accounts belong to entrepreneurs of SC, ST and OBC categories.
- The average ticket size for Mudra loans obtained by customers from banks and other financial institutions is less than Rs 50,000. The share of Shishu loans is the highest, at 40%, suggesting that the PMMY has largely supported first-time entrepreneurs.



Key challenges as observed by some experts:

- The Mudra Scheme does not provide credit guarantee to the banks that lend under the scheme. This can lead to a reluctance among banks to lend to small and micro enterprises.
- Benefits of scheme aren't reaching to intended beneficiaries.
- There is a concern that the Mudra Scheme may lead to a rise in non-performing assets (NPAs) in the banking system as the scheme offers collateral-free loans to small and micro enterprises. This can lead to a high default rate and NPAs. (However, bad loans under Mudra yojana is just 3.38 per cent of the total disbursements of Rs 13.64 lakh crore under the scheme) This statistic is impressive and which highlight that small businesses are timely repaying to the banks.



Advantages of Mudra scheme:

- Increased access to credit and at lower interest rates
- Promotes financial inclusion and entrepreneurship
- Increases confidence of marginalized group who are major beneficiaries of the scheme
- Flexible loan options considering the needs of the borrower

What else can be done?

- More efforts can be made to reach out to remote places and further enhance rural-entrepreneurship
- Strengthen monitoring and evaluation to ensure deserving people do not miss out on availing benefits of the scheme
- Increase participation of private sector banks to a greater extent. Currently, public sector banks provide larger share of loans under Mudra scheme
- The scheme can consider increasing the loan amount for borrowers, especially those who have a good track record of repayment. This can help businesses access larger amounts of credit and invest in their growth and expansion.

Inflation Targeting

News: RBI has been far from achieving its Inflation target of 4%. Despite this, the RBI had recently chosen to pause rate hikes in its latest monetary policy review. There are questions looming whether Inflation Targeting is the right policy mandate for India.

Background:

- In this article, we will read about important observations made by the Monetary Policy committee.

What is Inflation Targeting?

- Price stability is a necessary precondition for macroeconomic and financial stability. Thus, price stability remains the dominant objective of the monetary policy.
- Under Inflation Targeting Framework, the **central bank specifies an inflation rate** as a goal and adjusts its monetary policy to achieve the specified annual inflation rate. The targeted level of Inflation in India is 4% but the law also provides a comfort zone – 2% to 6% - within which Inflation can stray.
- Based on the Urjit Patel committee recommendation (2014), Government of India and RBI also signed the Monetary Policy Framework Agreement in 2015.
- The RBI Act, 1934 was amended in 2016 to make inflation targeting the nominal anchor of RBI's monetary policy and to establish a monetary policy committee (MPC).

What is MPC?

- MPC is a six-member body to set the policy rate (repo rate) to achieve the inflation target while keeping in mind growth objectives.
- **Composition** - 3 internal members of RBI (including RBI Governor as Chairman) and 3 external members appointed by government.
- The MPC is required to meet **at least 4 times** in a year.
- **Quorum** – At least **4 members** need to be present for the meeting.
- **Decision making** - **One vote** of each member with RBI Governor having a second or casting vote in case of equality of votes.

Some important observations made by Professor Ashima Goyal (She had advocated against rate hike in February 2023 MPC itself):

- She said the baton was now in **hands of government** (via fiscal policy) to help bring down inflation. she felt under the circumstances — as in, when inflation is pushed up by supply bottlenecks and costs instead of being pulled up by demand — monetary measures were not enough to contain inflation and needed fiscal (relating to government's taxes and spending) action.
- She warned against raising interest rates because they not only **hurt growth** but also be **counter-productive** from the perspective of containing inflation.
- Raising real policy rates [that's nominal interest rates minus inflation] to reduce demand has a **stronger effect** on growth than it does on inflation.
- Since there are **more lags in monetary transmission** in India, over-shooting can have persistent deleterious effects here, including instability.
- Macroeconomic stability improves most rapidly if real interest rates are kept smoothly below growth rates and counter external shocks. The Indian economy is well-poised to achieve this combination and to reduce its chronic underemployment.

Why is there a need for an alternative model in India?

- Contrary to the notion of an overheating economy, which experiences inflation because demand outstrips supply, in **India's case** (Since 2019) it is the **supply costs and bottlenecks that have created inflation**, not an economy running hot.
- In India, inflation is often driven by **supply-shocks** originating and operating through the **food economy**. Two, merely raising interest rates doesn't help beyond a point; indeed, it is counter-productive.
- Many economists, such as Pulapre Balakrishnan of Ashoka University, have repeatedly warned against the use of inflation-targeting by the RBI. Instead, he pointed to another way of viewing inflation and inflation control. This is called the "**structuralist model**". It basically says the same – Focus on supply side constraints when that is driving inflation.

World Bank's Logistics Performance Index (LPI)

News: India has jumped 6 places on World Bank's LPI. India is now ranking **38th** in the 139 countries index, as a result of significant investments.

Background:

- India's LPI was 54 in 2014 which improved to 44 in 2018.
- This ranking has improved after significant investments made in both soft and hard infrastructure as well as technology across the country.

What is Logistics Performance Index?

- The LPI is an interactive benchmarking tool developed by the World Bank Group. It helps countries identify the challenges and opportunities they face in their performance of trade logistics and what they can do to improve their performance.
- It measures the ease of establishing reliable supply chain connections and the structural factors that make it possible.
- The LPI considers 6 parameters to evaluate logistics performance, they are:
 - Customs performance
 - Consignment tracking and tracing
 - Timeliness of shipments
 - Ease of arranging shipments
 - Infrastructure quality
 - Logistics services quality



Key Findings:

- India's rank moved up five places in infrastructure score from 52nd in 2018 to 47th in 2023.
- The ranking climbed to 22nd spot on international shipments in 2023 from 44th in 2018 and moved four places up to 48th in logistics competence.

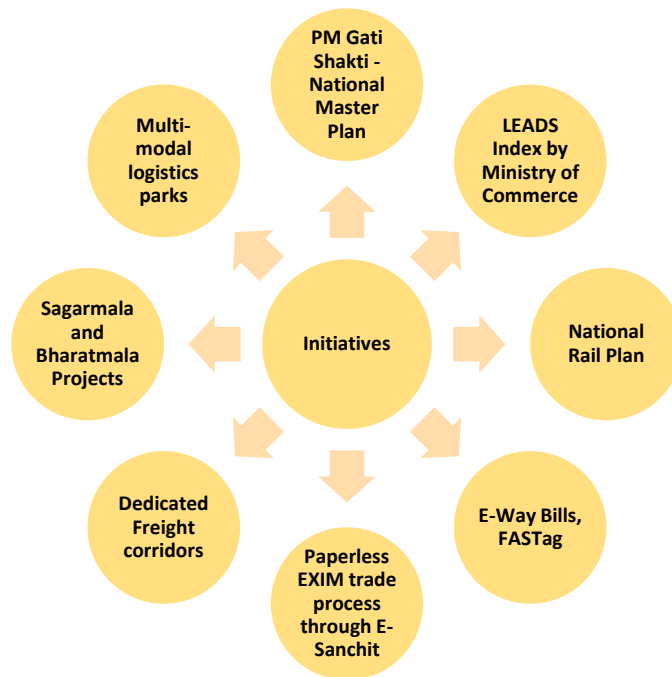
Which factors contributed to India's improved Logistics performance?

- **PM Gati Shakti project** as the National Master Plan for multimodal connectivity in October 2021 was important factor behind India's improved performance.
- **The National Logistic Policy** was launched last year to ensure quick last-mile delivery, end transport-related challenges, save time and money of the manufacturing in the logistics sector.
- The report has cited further that **modernisation** and **digitalisation** as a reason for emerging economies like India to leapfrog advanced countries
- **Technology** has been a critical component of India's logistics performance improvement efforts. Under a public-private partnership, the government has implemented a **supply chain visibility platform**, which has contributed to remarkable reductions in delays.
- **NICDC Logistics Data Services Limited** applies radio frequency identification tags to containers and offers consignees end-to-end tracking of their supply chain.
- According to the report, the **average dwell time** for containers between May and October 2022 was **three days** for India and Singapore, much better than some of the industrialised countries whereas the dwell time for the US was seven days and for Germany it was 10 days.

Dwell Time - Dwell time is how long a vessel spends at a specific port or terminal. It may also refer to the amount of time that a container or cargo spends at a port or terminal before being loaded onto a vessel or after being unloaded from a vessel.

- With the **introduction of cargo tracking**, dwell time in the eastern port of Visakhapatnam in Andhra Pradesh fell from **32.4 days in 2015 to 5.3 days in 2019**.

What are the steps taken by Government to improve Infrastructure and Logistics services?



UDAN 5.0

News: The Ministry of Civil Aviation in India has launched the 5th round of the Regional Connectivity Scheme (RCS) – Ude Desh Ka Aam Nagrik (UDAN) to improve connectivity in remote and regional areas of the country.

About:

- It was launched as a **Regional Connectivity Scheme (RCS)** under the Ministry of Civil Aviation in 2016, to provide affordable, economically viable and profitable air travel on regional routes to the common man even in small towns.
- It envisages providing connectivity to un-served and underserved airports of the country through the revival of existing airstrips and airports and generate employment in the aviation sector.

Important features of the Scheme:

- Under the scheme, airlines have to cap airfares for 50% of the total seats at Rs. 2,500 per hour of flight.
- It will be achieved through A financial stimulus in the form of concessions from Central and State governments and airport operators and Viability Gap Funding (VGF) – A government grant provided to the airlines to bridge the gap between the cost of operations and expected revenue.
- Regional Connectivity Fund (RCF) was created to meet the viability gap funding requirements under the scheme.
- The partner State Governments (other than UTs and NER states where contribution will be 10%) would contribute a 20% share to this fund.

About UDAN 5.0:

- It focuses on Category-2 (20-80 seats) and Category-3 (>80 seats) aircrafts.
- There is no restriction on the distance between the origin and the destination of the flight.
- VGF to be provided will be capped at 600 km stage length for both Priority and Non-Priority areas; earlier capped at 500 km.
- No predetermined routes would be offered; only Network and Individual Route Proposal proposed by airlines will be considered.
- The same route would not be awarded to a single airline more than once, whether in different networks or in the same network.
- Exclusivity of operation provided to an airline will be withdrawn if the average quarterly Passenger Load Factor (PLF) is higher than 75% for four continuous quarters. This has been done to prevent exploitation of the monopoly on a route.

- Airlines would be required to commence operations within 4 months of the award of the route (earlier this deadline was 6 months)
- Novation process for routes from one operator to another has been simplified and incentivized.

Novation - The process of substituting an existing contract with a replacement contract, where the contracting parties reach a consensus.

Important achievement of UDAN scheme:

- Increase in connectivity to Tier 2 and Tier 3 cities at affordable rates.
- Operational airports have gone up from 74 in 2014 to 141 now.
- More than 1 crore passengers have availed benefits of the scheme
- 68 underserved/unserved destinations which include 58 Airports, 8 Heliports & 2 Water Aerodromes have been connected under UDAN scheme.
- 425 new routes. The scheme has taken air connectivity to more than 29 Indian states/UT's

Markets in Crypto Assets (MiCA)

News: The first set of comprehensive rules –MiCA - were recently approved by The **European Parliament**. It will bring largely unregulated **cryptocurrency markets** under the ambit of government authorities.

What are the rules about?

- It will impose compliance on the issuers of crypto assets (any legal person who offers to the public any type of crypto-assets).
- The rules will apply to crypto-asset service providers (CASPs) who provide services like the custody, administration, and exchange of crypto assets.
- It mandates crypto companies to send information about senders and recipients of crypto assets to their local anti-money laundering authority.

Which assets will MiCA cover?

- Crypto assets of not just the traditional cryptocurrencies like Bitcoin, Ethereum, Binance Coin but also to newer ones like stablecoins, Dogecoin etc.
- However, it will exclude central bank digital currencies, non-fungible tokens (NFTs) and other crypto assets already under existing regulation.

Importance:

- **Uniformity** across 27 EU nations and a competitive edge to its growth.
- **22%** of the global crypto industry was **concentrated in Europe**, which received \$1.3 trillion worth of crypto assets. Penetration is more in Europe.
- To **keep a check on bankruptcies and fraud scandals** in the crypto industry which was seen most in 2022 thus it will protect consumers from Fraud and deception.
- It will also keep check on **money laundering** and **terror finance** activities via cryptocurrency.

What about Cryptocurrency in India? How is it regulated?

- India is yet to have a comprehensive regulatory framework for crypto assets and the legality of cryptocurrencies in the country is still a grey area.
- However, the Indian government has taken certain steps to bring cryptocurrencies under the ambit of specific authorities and taxation. For example, In the **Union Budget 2022**, the Finance Ministry imposed a **30% tax** on income from the **“transfer of any virtual digital asset.”**
- All transactions pertaining to **virtual digital assets** were brought under the purview of the **Prevention of Money Laundering Act (PMLA)**.
- India is now calling for consensus in the **G20 grouping**, to have a **globally coordinated policy response** on crypto assets.

Why Urea continues to rule India's farms?

News: The article discusses India's growing dependence on Urea in spite of measures taken by government to discourage its usage.

What initiatives were taken by government to check Urea usage?

- In May 2015, the Centre made it mandatory to coat all indigenously manufactured and imported urea with neem oil.
- It was followed by replacing 50-kg bags with 45-kg ones in March 2018.
- Recently, the launch of liquid 'Nano Urea' by the Indian Farmers' Fertiliser Cooperative (IFFCO).
- Earlier, in 2010 the Nutrient based subsidy (NBS) was launched as well.
- PM Pranam scheme
- One nation, one fertilizer
- Direct benefit transfer of Fertilizer subsidy

What are Fertilizers?

- Fertilisers are essentially food for crops, which need nutrients. All the nutrients are essential for plant growth and grain yield.
- They need nutrients – Primary, secondary and micro.
- Primary nutrients - N, P, K
- Secondary nutrients - S, calcium, magnesium
- Micro nutrients - iron, zinc, copper, manganese, boron, molybdenum

Why did Nutrient based subsidy (NBS) failed?

- Unlike the earlier product-specific subsidy regime, the NBS was intended to promote balanced fertilisation by discouraging farmers from applying too much Urea, Di-ammonium phosphate (DAP) and Muriate of potash (MOP)
- These are fertilisers with high content of a single nutrient: Urea (46% N), DAP (46% P plus 18% N) and MOP (60% K).
- It was expected to induce product innovation, besides more use of complex fertilisers (having lower concentrations of N, P, K and S in different proportions) and single super phosphate – SSP (containing only 16% P but also 11% S).
- However, data reveals worsening of nutrient imbalance, with urea consumption rising by over a third since 2009-10.

What observations are made regarding Nitrogen use efficiency (NUE)?

- **NUE** refers to the **proportion of N** applied mainly through urea that is actually utilised by crops to produce harvested yields.
- In a 2022 paper, it was estimated the NUE in India to have fallen from 48.2% in 1962-63 to 34.7% in 2018.
- In other words, when Indian farmers are applying 100 kg of N, hardly **35 kg is now being utilised**, with the balance 65 kg unavailable to the plant. Some of the unutilised N may convert into organic form and become part of the soil nitrogen pool.

What is the solution?

There are 2 approaches to cut urea consumption:

- The first is **raising prices**. The current per-tonne MRPs – Rs 5,628 for urea, Rs 27,000 for DAP and Rs 34,000 for MOP – are nowhere compatible with a 4:2:1 NPK use ratio. (In other words, such prices will only worsen the NPK ratio)
- The second approach is to **improve NUE** – enabling farmers to harvest the same or more grain yields with fewer bags. According to an industry expert the government should make incorporation of **urease** and **nitrification inhibitors** compulsory in urea.

These are chemical compounds that inhibit the activity of urease (a soil enzyme that breaks down urea into ammonium and further to ammonia) and nitrifying bacteria (that convert ammonium to nitrate), making more N available to the crops.

Science and Technology

Piezoelectric effect

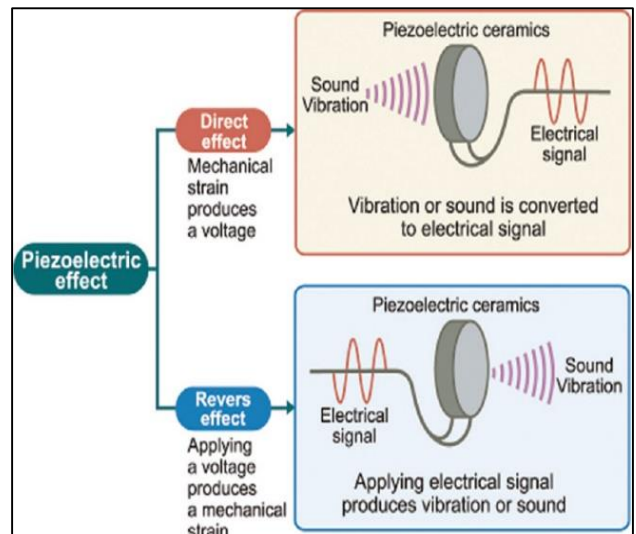
News: Recently, scientists have reported evidence of the Piezoelectric effect in liquids. The effect has been known for 143 years and in this time has been observed only in solids.

What is Piezoelectric effect?

- The piezoelectric effect is a phenomenon in which certain materials **produce an electrical charge in response to mechanical stress or pressure**. This effect occurs when the material is subjected to a force that causes its molecules to become polarized, meaning that the positive and negative charges within the material are separated from each other.
- When this polarization occurs, an electric potential is generated across the material, and if the material is connected to a circuit, a current can flow. The reverse is also true: if an electric potential is applied to the material, it can cause a mechanical deformation.
- Piezoelectric materials are used in a variety of applications, such as in sensors, actuators, and energy harvesting devices. Some examples of common piezoelectric materials include quartz, ceramics, and certain types of crystals.
- Example - Quartz is the most famous piezoelectric crystal: it is used in this capacity in analog wristwatches and clocks.
- The Piezoelectric effect was discovered in 1880, in quartz, by **Jacques and Pierre Curie**.

Significance of Discovery:

- The discovery opens the door to applications that have previously not been accessible with solid-state materials and are more readily recyclable and in many instances pose fewer environmental issues than many currently used piezoelectric materials.
- The liquids also displayed the inverse piezoelectric effect: they became distorted when an electric charge was applied, this fact could be used to control how the liquids bent light passing through them by passing different currents through them.
- That is, using this simple control mechanism, vials of these liquids could be lenses with dynamic focusing abilities.
- The new finding challenges the theory that describes this effect as well as opens the door to previously unanticipated applications in electronic and mechanical systems.



Reusable Launch Vehicle-Technology Demonstration (RLV-TD)

News: Recently, The Indian Space Research Organisation (ISRO) successfully carried out the landing experiment of the Reusable Launch Vehicle-Technology Demonstration (RLV-TD).

What are Reusable Launch Vehicles (RLV)?

- RLV means a launch vehicle that is designed to return to Earth substantially intact and therefore may be launched more than one time.
- An RLV may also contain stages that may be recovered by a launch operator for future use in the operation of a substantially similar launch vehicle.
- High costs that accrue due to space exploration, a reusable launch vehicle is considered a low-cost, reliable, and on-demand mode of accessing space.

What is RLV-TD?

- RLV-TD is part of the efforts of ISRO at developing essential technologies for a fully reusable launch vehicle to enable low-cost access to space.
- The RLV-TD will be used to develop technologies like hypersonic flight (HEX), autonomous landing (LEX), return flight experiment (REX), powered cruise flight, and Scramjet Propulsion Experiment (SPEX).
- In the future, this vehicle will be scaled up to become the first stage of India's reusable two-stage orbital (TSTO) launch vehicle.

How many RLV experiments have so far been carried by India?

- The first RLV experiment was done in 2016. ISRO officials described it as a “baby step” in the development of an RLV.
- The second RLV test conducted recently involved a Chinook Helicopter of the Indian Air Force lifting the RLV LEX to a height of 4.5 km and releasing the RLV, based on a command from the Mission Management Computer.
- After midair release, the RLV carried out an autonomous landing “under the exact conditions of a Space Re-entry vehicle's landing — high speed, unmanned, precise landing from the same return path — as if the vehicle arrived from space.

To understand the topic in better way we recommend you to watch the following video -
<https://youtu.be/9Sa6LIAkrHw>

Understanding Black Hole and Gravitational Lensing

News: Astronomers have discovered an Ultramassive black hole using gravitational lensing.

What are Black Holes?

- Black holes are places in space so dense, with such immense gravity, that beyond a certain boundary called the “**event horizon**,” nothing—not even particles and electromagnetic radiation such as light can escape from it.
- They form at the end of some stars' lives. When stars, which are around twenty times bigger than the sun exhaust all the energy, they can collapse in on themselves forming a black hole.
- The idea of a body so massive that even light could not escape was briefly proposed by astronomical pioneer and English clergyman **John Michell** in a letter published in November 1784.
- In 1915, Black holes was predicted by Einstein's theory of relativity – although Einstein himself was skeptical that they actually existed. Einstein said that though his equations on theory of gravity indicated that such objects were theoretically possible, but they “do not exist in physical reality.”
- In 1974, Hawking for the first time predicted the existence of Hawking radiation which are released by black holes.

Which technique was used by researchers to discover Black holes?

- Researchers used a technique known as **Gravitational lensing**. This technique enabled them to closely examine how light is bent by a black hole inside galaxy hundreds of millions of light-years from Earth.
- Supercomputer simulations and images captured by the Hubble Space Telescope were also used to confirm the size of the black hole.
- The black hole recently discovered is roughly 30 billion times the mass of our Sun and is one of the biggest ever detected and on the upper limit of how large we believe black holes can theoretically become.
- Moreover, this new approach of gravitational lensing taken by the researchers could make it possible to study inactive black holes in distant galaxies, which is not currently possible with other existing techniques.

What is Gravitational Lensing?

- Gravitational lensing occurs when a massive celestial body such as a galaxy cluster causes a sufficient curvature of spacetime for the path of light around it to be visibly bent, as if by a lens. The body causing the light to curve is accordingly called a gravitational lens.
- According to Einstein's general theory of relativity, time and space are fused together in a quantity known as spacetime. Within this theory, massive objects cause spacetime to curve, and gravity is simply the curvature of spacetime. As light travels through spacetime, the theory predicts that the path taken by the light will also

be curved by an object's mass. Gravitational lensing is a dramatic and observable example of the Einstein's theory in action.

LIGO India

News: Recently, Union Cabinet approved a project to build an advanced gravitational-wave detector in the **Hingoli district** in **Maharashtra**. The facility's construction is expected to be completed by 2030.

What are Gravitational Waves?

- Gravitational waves are **ripples** in the fabric of space and time that travel at the speed of light. They are **created by the motion of massive objects**, such as **black holes** or **neutron stars**, which generate gravitational waves when they orbit or collide with each other.
- According to Albert Einstein's theory of general relativity, any object with mass warps the space-time around it. When two massive objects orbit each other or collide, they produce ripples or waves in space-time that propagate outward at the speed of light.
- Gravitational waves are extremely weak and difficult to detect. They were first directly detected by the Laser Interferometer Gravitational-Wave Observatory (LIGO) in 2015, a century after they were predicted by Einstein's theory.

About LIGO India:

- It will be built by Department of Atomic Energy and the Department of Science and Technology with an MoU with the U.S. National Science Foundation.
- It aims to detect and study gravitational waves. LIGOs are designed to measure changes in distance that are several orders of magnitude smaller than the length of the proton.
- LIGO India would be the **fifth node** of this international network of gravitational wave observatories.

Significance for India

- India has been an active collaborator in a number of international science projects. These include the Large Hadron Collider experiments, and ITER, the effort to create a thermonuclear reactor that would enable controlled nuclear fusion reactions.
- India is also expected to be a partner country in setting up the next space station.
- However, India has not yet built a cutting-edge scientific facility on this scale on its own soil. LIGO, therefore, is crucial to demonstrating India's intent and capability to pull-off complex science projects on its own.

JUICE Mission

News: The **European Space Agency** (ESA) is all set to launch the Jupiter Icy Moons Explorer or Juice mission. The spacecraft is expected to reach Jupiter by 2031.

About:

- It is launched to make detailed observations of **Jupiter** and its three large ocean-bearing moons — **Ganymede, Callisto** and **Europa** by using remote sensing, geophysical and in situ instruments.
- Its **prime focus** will be on **Ganymede**, as it is the **largest moon** in the Solar System, larger than Pluto and Mercury and the only one to generate its **own magnetic field**.

What could possibly be outcomes of JUICE mission?

- The three moons, Ganymede, Callisto and Europa are believed to **hold immense amounts of water** which could be around six times more than the volume of water in Earth's oceans, there is a possibility that life is present on them. According to ESA, life on these moons could be in the form of microbes. However, JUICE **isn't equipped** to detect life.

What about previous exploration to Jupiter?

- Two other spacecraft have ever examined Jupiter: The **Galileo probe**, which orbited the planet between 1995 and 2003, and **Juno**, which has been circling the planet since 2016.
- By the time the Juice mission reaches Jupiter, another spacecraft, **NASA's Europa Clipper**, would already be orbiting the planet.

Raccoon Stealer Malware and NTRO

News: The National Technical Research Organisation (NTRO), a specialized intelligence agency, has informed that eight government entities were targeted by the Raccoon Stealer malware.

What is Raccoon Stealer?

- It is a kind of malware that steals various data from an infected computer. The malware is usually delivered through **email** and is available as **Malware-as-a-service (MaaS)**.
- Malware-as-a-Service (MaaS) is the term used to describe the unlawful leasing of software and hardware for the purpose of conducting cyber-attacks. This service is available for purchase on the Dark Web by hackers. It is often used by cybercriminals to launch attacks against individuals or organizations.

About NTRO:

- It was established in 2004.
- It is a technical intelligence agency **under the National Security Adviser** in the Prime Minister's Office. It has the same "norms of conduct" as the Intelligence Bureau and the Research and Analysis Wing.
- HQ – New Delhi

Which organisations work under NTRO?

- The **National Critical Information Infrastructure Protection Centre** has been created to monitor, intercept and assess threats to critical infrastructure and other vital installations from intelligence gathered using sensors and platforms which include satellites, drones etc.
- It also has the **National Institute of Cryptology Research and Development (NICRD)**, which is the first of its kind in Asia.
- NTRO operates from Technology Experiment Satellite (TES), Cartosat-2A, EMISAT and Cartosat-2B besides two Radar Imaging Satellites namely RISAT-1 & RISAT-2

Activities:

- During 2019 Balakot airstrike, NTRO also played an important role. NTRO surveillance confirmed 300 targets via active mobile connections in Markaz Syed Ahmad Shaheed training camp, just few days before IAF airstrike.

Large Hadron Collider

News: Recently, The LHC (Large Hadron Collider) has undergone upgrades which will make it more accurate.

What is LHC?

- The LHC is the **world's largest science experiment** that smashes tiny particles called **hadrons** together at really high speeds. It uses **protons** as the particles and has a long circular pipe where they're accelerated.
- It is operated by **CERN** (European Organisation for Nuclear Research)
- The LHC is a circular pipe that is **27 km long** and is located on the **Franco-Swiss border near Geneva**, Switzerland. It consists of two D-shaped magnetic fields created by almost 9,600 magnets.
- LHC is expected to throw up evidence of "**new physics**" — or physics beyond the Standard Model of Particle Physics, which explains **how the basic building blocks of matter interact**, governed by four fundamental forces.

How does it work?

- Protons, which are subatomic particles made up of quarks and gluons, are accelerated inside the LHC using these magnets.
- Quarks and gluons are subatomic particles that make up protons and neutrons. Quarks come in six different "flavors": up, down, charm, strange, top, and bottom. Gluons are particles that "glue" quarks together inside protons and neutrons through the strong nuclear force.
- Protons are not the only particles accelerated in the LHC.

- By switching the direction of the magnetic field rapidly, protons can be accelerated through the beam pipe. Other components help to focus the particles and keep them from hitting the pipe's walls.
- The protons eventually move at 99.999999% of the speed of light.



Significance:

- At such high energies, the LHC can create conditions that existed only fractions of a second after the Big Bang.
- Discovery of **Higgs boson** or "**God particle**" during the first run; using data to look beyond Standard Model.
- It will help in further understanding of "dark matter".
- The LHC also helps to test theories in particle physics, such as **supersymmetry** and **extra dimensions**.

Hadrons - Hadrons are subatomic particles that are made up of smaller particles called quarks. They are one of the two main types of particles that make up matter, the other being leptons.

Bosons - In particle physics, a boson is a type of subatomic particle that follows Bose-Einstein statistics, named after the Indian physicist Satyendra Nath Bose.

Chagas Disease

News: The World Health Organisation (WHO) observes World Chagas Disease Day on every **April 14th** to raise awareness about the little-known disease.

About:

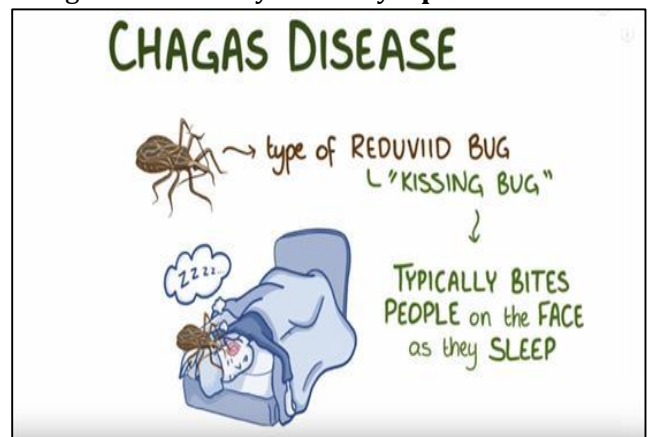
- Chagas disease, also known as "silent or silenced disease", is a **communicable parasitic disease** that infects 6-7 million people and claims around 12,000 lives every year worldwide, according to WHO.
- It is caused by the **protozoan Trypanosoma cruzi**, transmitted by a **family of bugs** called '**triatomines**' or '**kissing bugs**' that infect healthy individuals through bites or defecation.
- It can also be contracted through congenital transmission, blood transfusions, organ transplantation, consumption of uncooked food contaminated with fecal matter of infected bugs, or accidental laboratory exposure.
- Chagas is currently endemic in 21 countries in the Americas

What are the symptoms?

- Fever, headaches, rashes, inflammatory nodules, nausea or diarrhea, and muscle or abdominal pain.

Are there any vaccines available?

- Currently there are **no vaccines** available for Chagas disease
- However, antiparasitic medicines Benznidazole and Nifurtimox can treat the disease. They have a 100% efficacy rate if administered at the onset of the acute stage.



National Quantum Mission

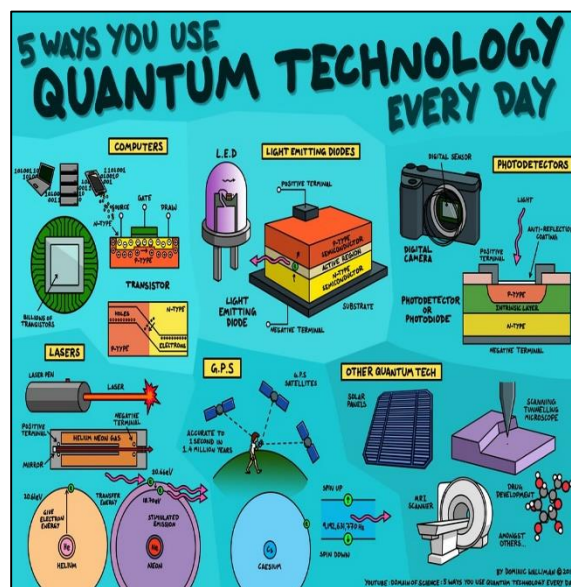
News: Recently, the union cabinet has approved the National Quantum Mission (NQM) to aid scientific and industrial research and development in quantum technology.

What is National Quantum Mission?

- The mission will be implemented by the **Department of Science & Technology (DST)** under the Ministry of Science & Technology from 2023 to 2031.
- The mission aims to seed, nurture and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology.

Key features of NQM:

- It will target developing **intermediate scale quantum computers** with 50-100 physical qubits in 5 years and 50-1000 physical qubits in 8 years.
- **Satellite-based secure quantum communications** between ground stations over a range of 2000 kilometers within India.
- Long distance secure quantum communications with other countries
- **Inter-city quantum key distribution** over 2000 km
- Multi-node Quantum network with quantum memories
- The mission will help develop **magnetometers** with high sensitivity for precision timing (atomic clocks), communications, and navigation.
- It will also support design and synthesis of quantum materials such as superconductors, novel semiconductor structures and topological materials for fabrication of quantum devices.
- Four Thematic Hubs (T-Hubs) will be set up in top academic and National R&D institutes on the domains:
 1. Quantum Computing
 2. Quantum Communication
 3. Quantum Materials & Devices
 4. Quantum Sensing & Metrology



Significance of National Quantum Mission

- India will be the seventh country to have a dedicated quantum mission after the US, Austria, Finland, France, Canada, and China.
- It will accelerate Quantum Technology led economic growth and make India one of the leading nations in the development of Quantum Technologies & Applications (QTA).
- Beyond its civilian applications, quantum technology is the newest frontier in military communication and has the potential to be a game-changer in conflicts.
- The mission will help India to compete with China in the field of quantum communication technology.
- A country with quantum communication can keep a country's electricity, aviation, defense, energy, and other critical infrastructure safe from attacks by an enemy country.

Conclusion

- National Quantum Mission can take the technology development ecosystem in the country to a globally competitive level. The mission would greatly benefit communication, health, security, financial and energy sectors as well as drug design, and space applications.

Quantum Technology

News: Recently, Raman Research Institute (RRI) has inked a Memorandum of Understanding (MoU) with the Indian Navy on Quantum Technologies to develop **secure maritime communications**.

Background:

- Under this agreement, RRI's Quantum Information and Computing (QuIC) lab will lead the research efforts towards developing **Quantum Key Distribution (QKD)** techniques that the Indian Navy could leverage in the nation's efforts towards **securing free space communications**.

What is Quantum Technology?

- Quantum technology is a class of technology that works by using the **principles of quantum mechanics** (the physics of sub-atomic particles), including quantum entanglement and quantum superposition.
- There are Four domains of Quantum Technology – I) **Quantum communication**, II) **Quantum simulation**, III) **Quantum computation** and IV) **Quantum sensing and metrology**

What is Quantum Communication?

- It focuses on the development of **secure communication systems** that use the principles of quantum mechanics. Quantum communication uses a **fundamentally different approach** to encryption.
- The most common example of quantum communication is QKD, which allows two parties to generate an encryption key that is virtually uncrackable.

Importance of Quantum technology in Maritime communication:

- Quantum encryption can be used to ensure secure communication between ships and shore stations.
- It facilitates faster communication between ships and shore stations.
- Quantum sensors can be used to improve navigation accuracy by measuring the Earth's magnetic field with high precision.
- Minimum damage to ships as it can navigate through narrow channels, avoid obstacles along the route.
- Quantum computers can be used to run complex simulations of weather patterns, which can provide accurate and timely information to mariners about impending storms or other dangerous weather conditions.

Way Forward

- Need to establish pilot projects to better understand how the technology works. It is in very nascent stage at this moment.
- Adequate funding and increased R&D is need of the hour.

India Ransomware Report 2022

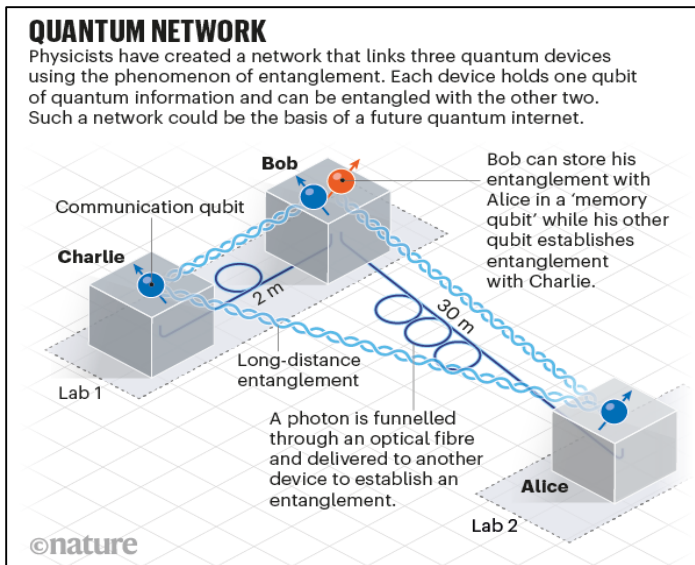
News: The Indian Computer Emergency Response Team (CERT-In) has reported that ransomware attacks are not only motivated by money but also by geopolitical conflicts.

What are Ransomware attacks?

- Ransomware is a type of malware that prevents or limits users from accessing their system, either by locking the system's screen or by locking the users' files until a ransom is paid.
- While ransomware has been around for decades, ransomware attacks are becoming more sophisticated, spreading through phishing emails, spear phishing, email attachments, vulnerability exploits, computer worms and other attack vectors.
- Examples – AIDS Trojan, Wannacry, Cryptolocker, Petya, Bad Rabbit etc

Key findings:

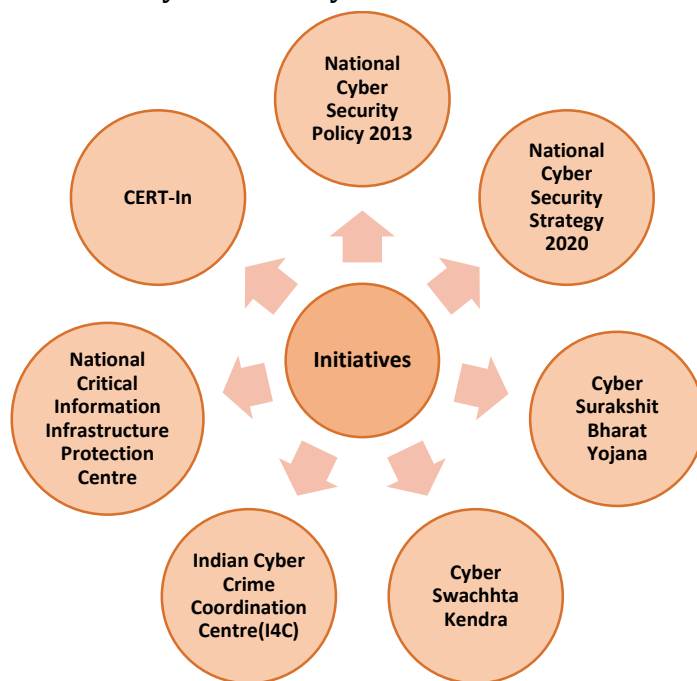
- The number of reported ransomware attacks in India in 2022 was 53% higher than in 2021.



Mechanism of Quantum Communication

- Ransomware attacks targeted critical infrastructure organizations to disrupt services and extract ransom payments.
- The IT/ITeS sector in India was the most impacted by ransomware attacks, followed by the finance and manufacturing sectors.
- Lockbit was the most prevalent ransomware variant in India, followed by Makop and DJVU/Stop, Makop and Phobos; Vice Society and BlueSky were new variants.
- The RaaS (Ransomware-as-a-service) ecosystem is becoming more prominent, allowing even non-technical individuals to launch ransomware attacks.
- It was suggested that organizations should regularly update their contingency plan, have higher cyber awareness among their employees, frequent audits, reporting about cyber-attacks to government etc.

Government initiatives for Cyber-Security:



Global Effort:

- **Budapest Convention on Cyber Crime** - is the first international treaty seeking to address Internet and computer crime by harmonizing national laws, improving investigative techniques, and increasing cooperation among nations. India is not a signatory.

Ayush Grid

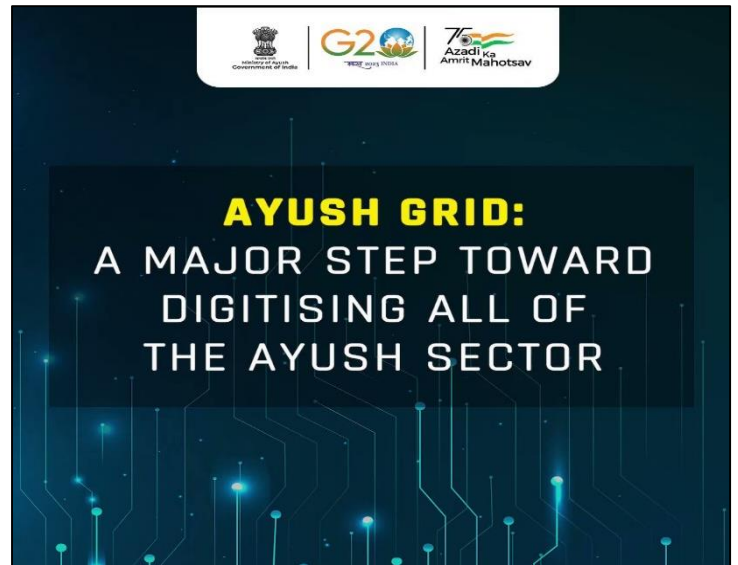
News: The Ministry of Ayush in India is leading an effort to **integrate traditional medicine with artificial intelligence (AI)** through the Ayush Grid, a **comprehensive IT backbone** for the traditional medicine sector.

Potential of AI in Medicine:

- Drug Discovery - Using natural language processing algorithms to analyse scientific papers and identify potential drug targets.
- Diagnostics - Using machine learning algorithms to analyse medical images and predict the likelihood of certain conditions, such as cancer or heart disease.
- Telemedicine – E-Sanjeevani by government of India had recently crossed 10 crore beneficiaries.
- Clinical Decision Support - To analyse patient data and recommend the most effective treatments based on the patient's medical history.
- Traditional Medicine - The Ayush Grid aims to transform the Ayush sector using AI to provide efficient, holistic, affordable, and quality services to all through a secure and interoperable digital ecosystem.
- Robotic surgery

Issues with AI in medicine:

- **Lack of accountability** – No laws on accountability in case of failure of treatment provided by AI.
- **Dearth of Data diversity** - An algorithm trained only on data from white male patients may not perform well on women or people of colour.
- **Bias** - An algorithm trained on data that includes racial biases may end up perpetuating those biases.
- **Privacy issues**
- **Black box problem** - It is often difficult to interpret how an AI algorithm arrived at its decision. This is known as the “black box” problem. In medical settings, this can be a concern because doctors need to understand the reasoning behind a diagnosis or treatment recommendation.



Recent government initiatives to promote AI in healthcare:

- Ayushman Bharat Digital India Mission
- IndiGen Programme (for genome sequencing of Indians)
- Human Genome Project
- Health Stack
- ICMR guideline of use of AI in Healthcare
- AIRAWAT (AI Research, Analytics and Knowledge Assimilation platform) - India’s first AI-specific cloud computing infrastructure.

PSLV C55 TeLEOS-2 Satellite

News: Recently, ISRO (Indian Space Research Organization) has successfully launched the PSLV (Polar Satellite Launch Vehicle)-C55/TeLEOS-2 mission from the Satish Dhawan Space Centre, Sriharikota in Andhra Pradesh.

About:

- This is the 57th flight of PSLV and 16th mission using the PSLV Core Alone configuration (PSLV-CA).
- It is a dedicated commercial mission through NSIL (NewSpace India Limited) with TeLEOS-2 as primary satellite and Lumelite-4 as a co-passenger satellite, **both belonging to Singapore**.
- The scientists used PSLV Orbital Experimental Module-2 (POEM-2) as an orbital platform to carry out the scientific experiments through non-separating payloads carried by it.

About TeLEOS – 2:

- It is an **Earth Observation Satellite (EOS)** and will be the **primary satellite** being carried by the rocket.
- In 2015, ISRO launched TeLEOS-1, which was launched into a low Earth orbit for remote sensing applications. ISRO has so far launched nine satellites belonging to Singapore.
- TeLEOS-2 carries a **Synthetic Aperture Radar (SAR)** payload capable of imaging at 1m full-polarimetric resolution. It will be able to provide **all-weather day** and **night** coverage.
- SAR is a type of **active radar imaging technology** that uses the motion of the radar antenna to create a **high-resolution 3D image** of the target area.

About LUMILITE-4:



- It is an advanced 12U satellite developed for the technological demonstration of the High-Performance Space-borne VHF Data Exchange System (VDES).
- "12U" refers to a standardized form factor for CubeSats, which are small satellites with a modular design.
- It aims to augment **Singapore's e-navigation maritime safety** and benefit the **global shipping community**

India Space Policy 2023

News: The government has approved the Indian Space Policy 2023 which seeks to boost private sector participation and increase investments in the space sector from private companies.

Background:

- The space sector was opened up for private players in 2020 and since then India has seen more than 200 space start-ups taking the lead in the Space sector.
- The policy has given further clarity to private players on the guidelines to be followed.

Need for New space policy:

- India currently has about 2% of the Global space economy
- The Indian space industry will be valued around \$13 Billion by 2025
- There is lot of potential in India's youth who are highly skilled but are waiting for a chance to be part of Space sector
- Cost-effectiveness
- There's already lot of manufacturing done by private sector and only assembling is done in ISRO. This can only improve with clear roles set by India space policy 2023.
- World over there's lot of private sector participation in space - The United States, Europe, and Russia — all have space industries with big players like Boeing, SpaceX, AirBus, Virgin Galactic.

Key details of India Space policy 2023:

Private sector participation

- The policy seeks to **institutionalize** the private sector participation in the space sector, with ISRO focusing on research and development of advanced space technologies.
- Opened up not only manufacturing but also given impetus to Space as a service. For example, private players can provide satellite services, launch services, Data service (How Musk's Starlink network provided data to Ukraine government during ongoing Russia-Ukraine war), maintenance in space.

It sets clear roles and responsibilities

- **IN-SPACE** – It will promote, handhold, guide and authorize space activities in the country.
- **ISRO** – It will focus on R&D of new space technologies and applications. It will also transfer mature systems to the industry for commercial exploitation.
- **NSIL** – it will be responsible for commercializing space technologies and platforms created through public expenditure.
- **Private entities** – Manufacturing, services. They can offer national and international space based communication services etc.

Operational missions

- The operational part of ISRO's missions will be moved to the NSIL

India's share in Global space economy

MAKING INDIA SELF-RELIANT IN SPACE SECTOR

Private Sector Participation in Space Activities Approved

- Reforms to help India leapfrog to next stages of space activities; to become a **Global technology powerhouse**
- To enhance socio-economic use of space assets & activities; **Large-scale employment opportunity in technology sector**
- IN-SPACE*** to provide level playing field for private companies to use Indian space infrastructure
*Indian National Space Promotion and Authorization Centre
- NSIL**** to reorient space activity models from 'supply driven' to a 'demand driven'
**New Space India Limited
- Allow ISRO to focus more on R&D activities, exploration missions & human spaceflight programme**

- Currently 2% but if the policy is successfully implemented it will increase to 10% in the future.

Need of the hour:

- The New space policy is still short of a Bill. A bill will provide legal framework for commercial usage of space sector. It will help create mechanisms for insurance for instance against damage in space. Right now it is not an option which means huge cost for private players.

Way Forward

- The New Space Policy will provide a strategic roadmap for the growth and development of India's space program, to promote innovation, technological advancements, and international cooperation, and to ensure national security in the space domain.

World Malaria Day

News: The day is observed every year on 25th April.

Background:

- It was established by the World Health Organization (WHO) in 2007 to raise awareness about malaria.
- Theme - "Time to deliver zero malaria: invest, innovate, implement".
- As per the **World Malaria Report 2022**, the disease claimed the lives of an estimated 6,19,000 people in 2021.
- The report also highlighted that India has shown a significant decline in malaria cases and deaths in past 10 years.

What is Malaria?

- According to WHO, Malaria is a life-threatening disease spread to humans by some types of mosquitoes. It is mostly found in tropical countries. It is preventable and curable.
- It mostly spreads to people through the bites of some **infected female Anopheles mosquitoes**. Blood transfusion and contaminated needles may also transmit malaria.
- There are 5 **Plasmodium parasite** species that cause malaria in humans and 2 of these species – **P. falciparum** and **P. vivax** – pose the greatest threat.

What are its symptoms?

- The most common early symptoms of malaria are fever, headache and chills.
- Some types of malaria can cause severe illness and death. Infants, children under 5 years, pregnant women, travellers and people with HIV or AIDS are at higher risk.
- Severe symptoms - extreme tiredness and fatigue, impaired consciousness, multiple convulsions, difficulty breathing, dark or bloody urine, jaundice (yellowing of the eyes and skin) and abnormal bleeding.

Is there any vaccine available?

- Since October 2021, WHO recommends broad use of the **RTS,S/AS01** malaria vaccine among children living in regions with moderate to high P. falciparum malaria transmission. The vaccine has been shown to significantly reduce malaria, and deadly severe malaria, among young children.

What are the efforts taken by India?

- **National Framework for Malaria Elimination 2016-2030 - Eliminate malaria** (zero indigenous cases) throughout the entire country **by 2030**. Maintain malaria-free status in areas where malaria transmission has been interrupted and prevent re-introduction of malaria.
- **Malaria Elimination Research Alliance-India** (MERA-India) – Started by Indian Council of Medical Research (ICMR) with other partners.

Global efforts:

- **Global Malaria Program** – By WHO.
- **E- 2025 initiative** – Launched to halt the transmission of malaria in 25 identified countries by 2025.

Environment and Ecology

Heat Action Plans

News: Recently, the Centre for Policy Research (CPR), one of India's leading public policy think tanks, has released the first critical assessment, stating that most of the Heat Action Plans (HAPs) may not be suited to the risks faced by local populations.

What are Heatwaves?

- A heatwave is a period of **abnormally high temperatures**, a common phenomenon in India during the months of May-June.
- The Heatwave is considered when the **maximum temperature** of a station reaches **at least 40°C for Plains** and **at least 30°C for Hilly regions**.
- In 2016, the **National Disaster Management Authority (NDMA)** issued comprehensive guidelines to prepare national level key strategies for mitigating the impact of heatwaves.

What are HAPs?

- HAPs are the **primary policy response** to economically damaging and life-threatening heat waves.
- HAPs are documents prepared at the **state, district and city levels** for taking short-term actions to limit the number of human deaths and other adverse impacts of heat waves and further long-term actions to prepare for future heat waves based on the data and analysis of previous heat waves.
- Short term actions can include alerting people to heat waves and coordinating various departments such as healthcare and agriculture.
- Long-term actions can include infrastructural changes such as cool roofs, increase in green cover and water harvesting structures.

Key Findings:

- Extreme heat poses an unprecedented challenge to health and productivity. Landmark heatwaves (1998, 2015, 2022) have led to large death tolls, economic damage by reducing labor productivity, reducing water availability etc.
- By 2050, as many as 24 urban centers are projected to breach average summertime highs of at least 35 degrees Celsius, disproportionately impacting economically weaker sections.
- Most HAPs are **not built for local contexts**. They generally focus on extreme dry heat and ignore the threats posed by humid heat and warm nights.
- Most HAPs adopt national heatwave thresholds that may not be suited to the risks faced by local populations. Only 10 out of 37 HAPs seem to have locally specified temperature thresholds.
- Only three of 37 HAPs identify funding sources. Eight HAPs ask implementing departments to self-allocate resources, indicating a serious funding constraint.
- HAPs have weak legal foundations. None of the HAPs reviewed indicates the legal sources of their authority. This reduces bureaucratic incentives to prioritize and comply with HAPs instructions.
- India is one of the most exposed and vulnerable countries to heat.

Key recommendations:

- There is a need for the world to **reduce emissions** in the next two decades to prevent warm temperatures from reaching 1.5° C.
- HAPs have to identify **sources of financing**, either from new funds or by combining actions with existing national and state policies and set up rigorous independent evaluations as a basis for constant improvement.
- **Without implementation-oriented HAPs**, India's poorest will continue to suffer from extreme heat, paying with both their health and incomes.

International Day of Zero Waste 2023

News: Recently, 'Swachhotsav - 2023: Rally for Garbage Free Cities' was held in New Delhi as part of India's celebration of the International Day of Zero Waste 2023.

Background:

- The International Day of Zero Waste, observed for the first time on **30 March 2023** and is jointly facilitated by **UNEP** and **UN-Habitat**.
- In this context, we will discuss about achievements of India's Swachh Bharat Mission, challenges and a way forward.

Objectives of International Day of Zero Waste:

- It aims to raise awareness of the **importance of zero waste** and **responsible consumption** and production practices and **urban waste management** contributing to achieving sustainable development.
- The day calls on rethinking our practices and for embracing a circular economy as a key for addressing the triple planetary crisis of climate change, nature loss and pollution, and putting the planet, and humanity, on a path to health and prosperity.

Important achievements of Swachh Bharat Mission across different sectors:

Open Defecation Free

- Urban India has become Open Defecation Free (ODF), with all 4,715 Urban Local Bodies (ULBs) completely ODF.
- 3,547 ULBs are ODF+ with functional and hygienic community and public toilets, and 1,191 ULBs are ODF++ with complete faecal sludge management.

Waste processing

- Waste Processing in India has gone up by over 4 times from 17% in 2014 to 75% in 2023.

Garbage Free Cities

- The Garbage Free Cities (GFC)-Star rating protocol launched in January 2018 has increased from only 56 cities in the first year to 445 cities till date, with an ambitious target of having at least 1,000 3-star GFC by October 2024.
- The 2023-24 budget has reinforced India's commitment to building a circular economy through an enhanced focus on scientific management of dry and wet waste.
- The Rally for Garbage Free Cities is a women-led Jan Andolan, where lakhs of citizens have taken on the responsibility of cleaning their streets, neighbourhoods, and parks.

'Stories of Change' Compendium

- The 'Stories of Change' Compendium captures some of the amazing on-ground successes of more than 300 women Self-Help Group members who have travelled across cities to learn various waste management models.
- 4 lakh women are directly engaged in sanitation and waste management as an enterprise in urban India, providing dignity and livelihood opportunities for women.

Challenges:

- India has a shortage of infrastructure and resources to manage waste effectively. Many cities lack adequate landfill sites, waste processing facilities, and waste collection systems.
- The rise of online retail and food delivery apps, though restricted to cities has significantly contributed to the rise in plastic waste.
- India lacks time series data or panel data in connection with solid or liquid waste. So it is very difficult for the waste planners of the country to analyse the economy of waste management.

Way Forward

- **Composting centres** can be established in cities to **reuse organic waste**, which will enhance soil carbon content and eliminate the need for chemical fertilisers. Compost will also help in carbon dioxide sequestration by storing carbon back into the soil.
- There is a need to devise the mechanism for **Extended Producer Responsibility** in India to ensure that product manufacturers are made financially responsible for various parts of the life cycle of their products.
- Give necessary importance to waste pickers, provide them incentives on achieving tangible targets, take steps to educate public about social inclusion of waste pickers.

Air Pollution and Public Health in South Asia

News: According to the **World Bank's** 'Striving for Clean Air: Air Pollution and Public Health in South Asia' report, 9 out of the world's 10 cities with the worst air pollution are in South Asia.

Key Findings:

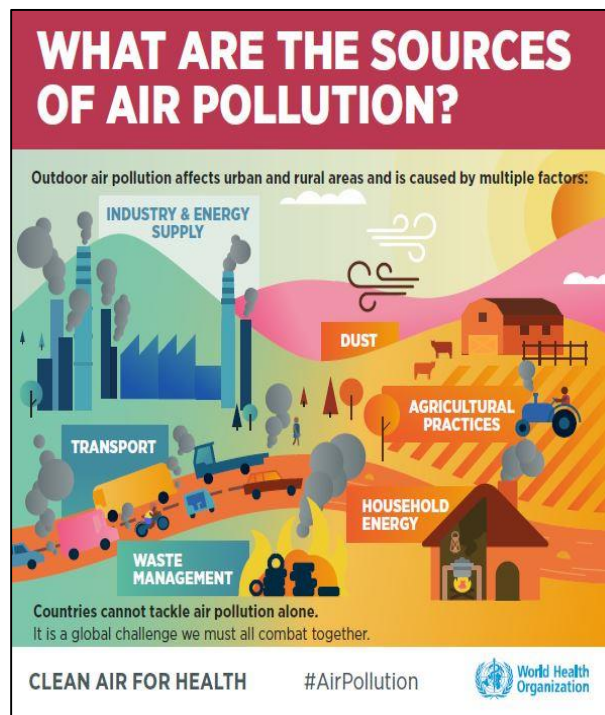
- The report quantifies particulate matter (PM) emissions and how they disperse in the atmosphere.
- Ambient air pollution is a public health crisis in South Asia, not only imposing high economic costs, but also causing an estimated 2 million premature deaths each year.
- In South Asia, nearly 60% of the population lives in areas where concentrations of 5 exceed an annual mean of 35 $\mu\text{g}/\text{m}^3$ (WHO prescribes 5 $\mu\text{g}/\text{m}^3$).
- In the densely populated Indo-Gangetic Plain, it is over 20 times higher than the WHO-prescribed levels.
- This report identifies six major airsheds in South Asia where spatial interdependence in air quality is high.

Main causes of Air pollution in South Asia:

- Solid fuel combustion
- The current management practices of municipal waste in the region, include burning plastics.
- Generation of secondary PM in the form of ammonia (NH_3) emissions related to the agriculture sector.
- In the western part of South Asia, natural sources, such as dust, sea salt, and forest fires, are an important source of air pollution.

Way Forward

- Controlling ambient air pollution is difficult without a better understanding of the activities that emit PM and how emissions travel across locations.
- Interdependence in air quality within airsheds in South Asia is necessary when weighing alternative pathways for pollution control.
- Focusing on hotspots through regional cooperation would reduce mean exposure to 26 $\mu\text{g}/\text{m}^3$.



India celebrates 50 years of Project Tiger

News: The Indian government will officially mark the 50th year of 'Project Tiger' on 9 April with a three-day event in Mysuru, Karnataka.

About Project Tiger:

Features	Description
Objective	To ensure the maintenance of a viable population of tigers in India for scientific, economic, aesthetic, cultural and ecological values. To preserve, for all times, areas of biological importance as a national heritage for the benefit, education and enjoyment of the people.
Type of Scheme	Centrally Sponsored Scheme under MoEFCC
Who implements?	National Tiger Conservation Authority (NTCA)
About NTCA	NTCA was established following a recommendation of the Tiger Task Force). It is a statutory body under the Wildlife (Protection) Act, of 1972.

Members of NTCA	Union Minister of the MoEFCC (as Chairperson)+ the Minister of State in the MoEFCC (as Vice-Chairperson)+ 3 MPs, Secretary, MoEFCC
States covered	18 States in India with 54 Tiger Reserves (Guru Ghasidas National Park and the Tamor Pingla Wildlife Sanctuary in Chhattisgarh being the latest)
Role of NTCA	Supervisory and coordination role and approval of the Tiger Conservation Plan prepared by the State Governments.

Key Achievements:

- The number of tigers in India has increased from 1827 (the 1970s) to around 2967, with a 30% rise in the population in the last eight years.
- 9 tiger reserves covering 18,278 sq km in 9 states (the 1970s) to currently, 54 tiger reserves spread over more than 75,000 sq km in 18 tiger range states.
- As hunting was banned to save tigers, the population of many other animals started increasing.
- With a current population of about 3,000 tigers, India is home to more than 70% of the global tiger population.
- TX2 (goal of doubling wild tiger population by 2022) – India achieved this target 4 year in advance as part of St. Petersburg Declaration on Tiger Conservation.

Challenges faced:

- As per NTCA, 1059 tiger deaths were in the last 10 years, most in Madhya Pradesh
- Conflict with FRA, 2006 - The Forest Rights Act passed by the Indian government in 2006 recognizes the rights of some forest-dwelling communities in forest areas.
- Lack of adequate protection in the outside tiger reserve. According to a report, nearly 29 per cent of tigers lives outside of the core zone
- Wildlife habitats are shrinking leading to more instances of human-animal conflict. From 2001 to 2016, 1,065 cases of human-tiger conflict were recorded including injuries and even fatalities on both sides.

Way Forward

- The tiger is a unique animal which plays a pivotal role in the health and diversity of an ecosystem.
- There is a need for further community involvement through a tiger reserve that is not built with fences and armed patrol guards, but around a cultural model of conservation i.e. including local tribes like Idu Mishmi in Arunachal Pradesh, who consider Tigers as their elder brother and sacred.



All India Tiger Estimation 2022

News: The fifth cycle of the All-India Tiger Estimation (2022) was released to mark 50 years of Project Tiger.

Key Findings:

Tiger Population and Growth rate

- 3,167 in 2022, up from 2,967 in 2018.
- About 6.7% (from 2018 to 2022) which is significantly slower than the 33% growth rate during 2014-2018.

Which areas have seen significant increase?

- **Shivalik Hills** and **Gangetic Plains** saw a significant increase in the tiger population.

Which areas have seen decline in Tiger occupancy?

- Tiger occupancy in the Western Ghats declined, with significant declines observed in the Wayanad landscape and in the Biligiriranga Hills
- Tiger occupancy in Northeast Hills, Jharkhand, Odisha, Chhattisgarh, and Telangana showed a decline.

New areas of Tiger population:

- Uttar Pradesh's Suhelwa Wildlife Sanctuary and northwest of Yamuna in Himachal Pradesh.

High conservation priority

- The genetically unique and small population of tigers in **Simlipal** is of high conservation priority.

Best maintained Tiger reserve

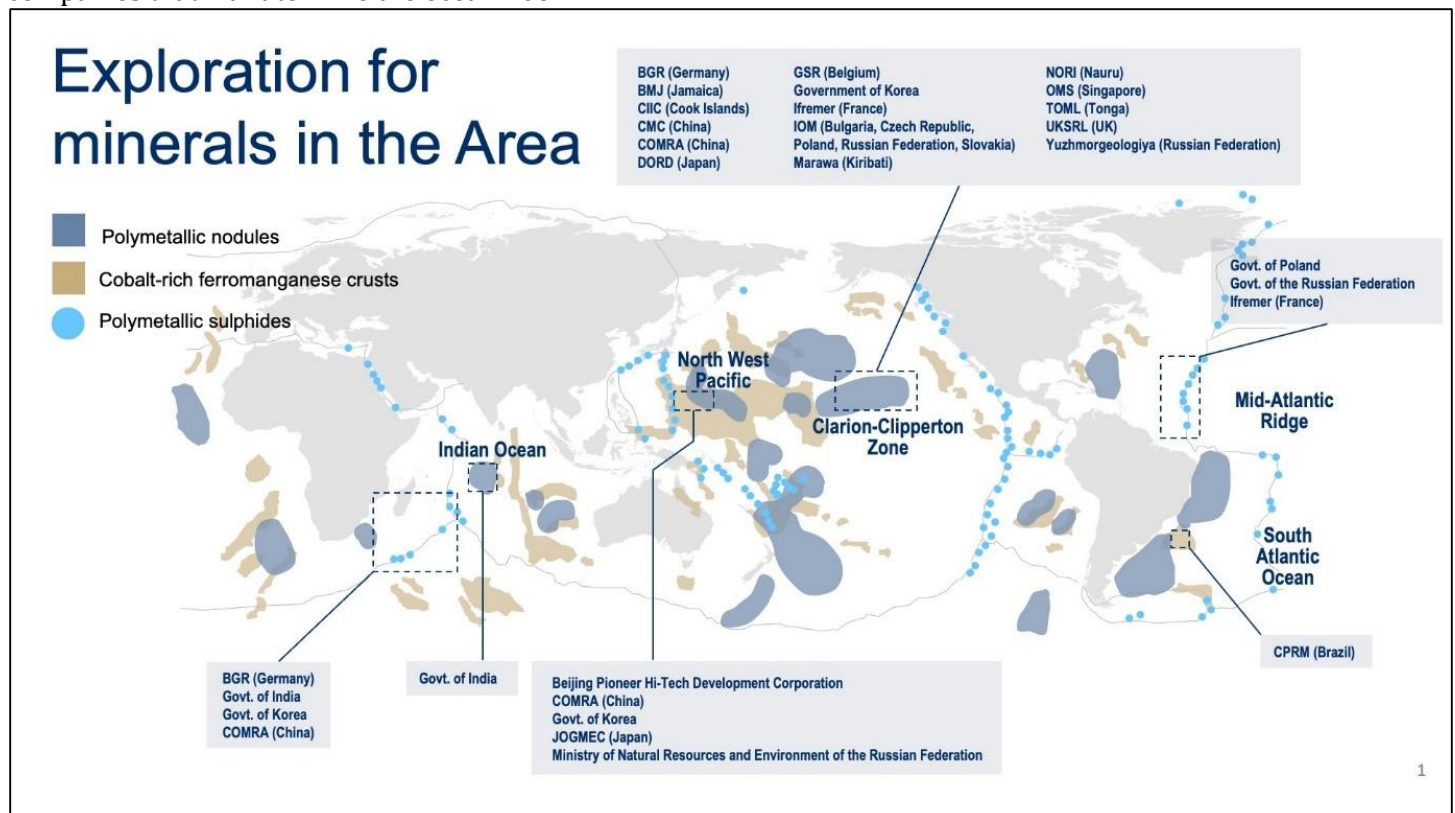
- **Periyar Tiger Reserve** (TR), Kerala is the best-maintained of all TRs followed by Satpura TR (Madhya Pradesh), Bandipur and Nagarhole (Karnataka).

Largest Tiger population

- The **Nilgiri cluster** (Nagarhole to Biligiriranga Hills) is the largest tiger population in the world.

UN to allow deep sea mining

News: The International Seabed Authority (ISA) has decided that it will start taking permit applications from companies that want to mine the ocean floor.



About ISA:

- The International Seabed Authority (ISA) is an autonomous international organization established under the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and the 1994 Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea (1994 Agreement).
- In accordance with UNCLOS, Article 156(2), all States Parties to UNCLOS are ipso facto members of ISA. As of 1 May 2020, ISA has 168 Members, including 167 Member States and the European Union.
- HQ – Kingston, Jamaica

What is Deep sea mining?

- It involves retrieving mineral deposits from nodules that dot the ocean floor, typically more than 600 feet below sea level.
- The most economically viable nodules lie partially under sediment in the north-central Pacific Ocean, the southeastern Pacific Ocean, and the northern Indian Ocean.
- Under the UNCLOS, ocean areas beyond national jurisdiction and their mineral resources are the common heritage of humankind. It contains most of the same minerals (but in enriched forms) that are found on land, as well as minerals that are unique to the deep ocean, such as ferromanganese crusts and polymetallic nodules.

Need for Deep sea mining:

- To extract key battery materials – cobalt, copper, nickel, and manganese – from potato-sized rocks called “polymetallic nodules” found at depths of 4 – 6 km.
- Within the next 2 decades, the IEA predicts that renewable energy technology will make up over 40% of the demand for copper, 60 -70% for cobalt and nickel, and 90% for lithium.
- Thus, Deep sea mining could help meet the rising demand for energy transition metals.

What are the concerns raised?

- At the 28th Session of the ISA (Kingston, Jamaica), several countries insisted that industrial undersea mining requires strict rules.
- Absence of mining code - The 36-member council is uncertain about the process it should adopt for reviewing applications for mining contracts.
- Increasing Geopolitical tensions - China has demonstrated its desire to shape international norms in the maritime domain, as exemplified by Beijing’s aggressive actions in the South China Sea. The nation has hold over 5 out of 30 Deep sea mining exploration contracts.
- It would go beyond harming the seabed and have a wider impact on the deep-sea marine ecosystems in regulating the climate.
- Chile, France, Palau, and Fiji, among other nations, have called for a global moratorium on the practice, citing environmental concerns and a lack of sufficient scientific data.
- In Resolution 122, IUCN notes that if deep-sea mining is permitted to occur, biodiversity loss in these unique ecosystems will be inevitable, and the consequences for ocean ecosystem function, and for humanity, could be vast.

Open Source Seeds Movement

News: Inspired by the success of open-source software, a Canadian plant breeder – T.E. Michaels suggested (in 1999) a similar approach to seeds.

Background:

- With declining public sector breeding and rising dominance of private sector in seed sector, the concept of Open-Source Seeds becomes increasingly relevant.

What are Plant Breeders rights?

- The growth of the commercial seed industry, scientific plant-breeding, and the advent of hybrid seeds led to the establishment of Plant Breeders' Rights (PBR) in many countries.
- Under the PBR regime, plant breeders and developers of new varieties have the exclusive right to demand royalties on seeds and legally enforce PBRs. This limited the rights of farmers to use and reuse seeds and restricted their ability to innovate.
- The establishment of the World Trade Organization (WTO) in 1994 and the Trade-Related IPR Agreement (TRIPS) cast a global IPR regime over plant varieties.
- TRIPS required countries to provide at least one form of IP protection for plant varieties, which raised concerns about the freedom to innovate.
- The Green Revolution was spearheaded by public-sector breeding institutions and seeds were available as ‘open pollinated varieties’, or as reasonably priced hybrids with no restrictions on farmers to cultivate, reuse and share.

- But the genetic revolution in agriculture was led by the private sector, with seeds mostly made available as hybrids and/or protected by strong IPRs.

How is intellectual property (IP) protected in agriculture?

- There are now two forms of IPR protection in agriculture: PBRs and patents.
- Together, they restrict farmers' rights and the freedom to develop new varieties using germplasm from IP-protected varieties.
- They have consolidated the seed sector by increasing the number of plant varieties covered by IP Rights (IPRs).

What are problems triggered by IP Protection?

- Domination of private sector in the seed sector.
- The high prices of genetically modified (GM) seeds.
- The State's Intervention on Bt cotton Seeds in India.
- Therefore, the need for alternatives became keenly felt and this is when the success of open-source seeds was inspired.

What is the Open source seeds?

- It simply asks for a pledge, that an individual won't "restrict others' use of seeds or their derivatives by patents or other means.
- Open-Source Seeds Initiative in India: The Hyderabad-based **Centre for Sustainable Agriculture (CSA)**, part of the Apna Beej Network, developed a model with the help of farmer-producer organisations (FPOs).
- Open source approach can be used in farmer-led seed conservation (of traditional varieties) and distribution systems.
- To promote farmer-led participatory plant-breeding exercises as traditional varieties often lack uniformity and quality.

Way Forward

- Under the Plant Variety Protection and Farmers' Rights Act (PPVFRA) 2001, farmers can register varieties as 'farmer varieties' if they meet certain conditions, and have the right to reuse, replant and exchange seeds. However, they can't breed and trade in varieties protected under the Act for commercial purposes. Using the open-source approach here will enable farmers to gain more rights over germplasm and seeds and facilitate innovation.
- Open-source principles can facilitate testing, improvisation and adoption – all of which will ultimately be beneficial to India's food security and climate-disease resilience.

Forest (conservation) Amendment Bill, 2023

News: Recently, the government introduced the Forest (Conservation) Amendment Bill, 2023 in Lok Sabha and proposed changes to the Forest (Conservation) Act, (FC) 1980.

Objectives:

- To build forest carbon stock by raising plantations.
- It also seeks to make land available for compensatory afforestation.

What are the proposed changes?

Introduce Preamble

- It proposes to insert a preamble to the Act to encompass the country's rich tradition of preserving forests, their bio-diversity and tackling climate change challenges within its ambit.

Restriction on activities within forests

- The Act restricts the de-reservation of forest or use of forest land for non-forest purposes. Such restrictions may be lifted with the prior approval of the central government. Non-forest purposes include use of land for cultivating horticultural crops or for any purpose other than reforestation.
- The Bill adds more activities to this list such as: (i) zoos and safaris under the Wild Life (Protection) Act, 1972 owned by the government or any authority, in forest areas other than protected areas, (ii) eco-tourism

facilities, (iii) silvicultural operations (enhancing forest growth), and (iv) any other purpose specified by the central government.

Power to issue Directions

- The Bill adds that the central government may issue directions for the implementation of the Act to any other authority/ organisations under or recognised by the centre, state, or union territory.

Land under purview of Act

- The Bill provides that two types of land will be under the purview of the Act - (i) land declared/notified as a forest under the Indian Forest Act, 1927 or under any other law, or (ii) land not covered in the first category but notified as a forest on or after October 25, 1980 in a government record.
- Further, the Act will not apply to land changed from forest use to non-forest use on or before December 12, 1996 by any authority authorized by a state/UT.

What activities does it exempt?

- **All strategic** linear projects of "national importance and concerning national security" **within 100 km** of international borders, the LAC, and the LoC.

What are main concerns?

- With the amendments, all those forest lands which do not fall in the reserved area but are available in government records before 1980 will not come under the purview of the Act. It moves away from the Supreme Court's 1996 verdict which had ensured every forest mentioned in government records gets legal protection against deforestation.
- Critics argue that the terms like 'proposed', 'ecotourism facilities', and 'any other purposes' can be exploited or misused for activities damaging forests and ecosystems in forest lands.
- There are concerns that plantations are a significant threat to Indian forests as they replace the natural ecosystems, affect soil quality, and particularly threaten the native biodiversity.

ZBNF vs Organic Farming Vs Conventional Farming

News: Zero Budget Natural Farming (ZBNF) in **Andhra Pradesh** has led to significantly higher crop yield compared to organic or conventional (synthetic fertilisers and pesticides) farming, a new study of the state's natural farming programme has found.

Background:

- The southern state has been pushing **100 per cent chemical-free** agriculture under the **Andhra Pradesh Community Managed Natural Farming (APCNF)** programme it launched in 2016.
- In the last six years, it has worked with 0.63 million farmers out of a total estimated six million farmers in the state, on natural farming.

Key Findings:

- Researchers from the University of Reading, the United Kingdom and Rythu Sadikara Samstha, a non-profit set up by the government in 2014 observed that when compared to the conventional treatment, **yields** were maintained in the case of organic farming and **increased in ZBNF**.
- Apart from the higher yield, **nutrient availability** was also unaffected in ZBNF. This is a significant finding as there have been arguments that conventional treatment, which uses synthetic fertilisers, increases extractable nutrient concentrations compared to organic and ZBNF treatments.
- However, the efficacy of the ZBNF treatment was **context specific** and **varied** according to district and the crop in question. The ZBNF yield benefit is likely attributed to mulching, generating a cooler soil, with a higher moisture content and a larger earthworm population.
- It has been estimated earlier that **if ZBNF covered 25 per cent** of the total crop area in Andhra Pradesh, **\$70 million** would be saved in fertiliser subsidies every year.

Basis	Conventional Farming	Organic Farming	ZBNF
Chemical Usage	Extensive use of chemicals, fertilizers	It discourages use of fertilizers and pesticides but not completely prohibits.	Complete prohibition of use of any chemical or organic fertilizers.

Soil	Relies on ploughing, tilling, and mixing of manures	Requires basic agro practices like tilling, ploughing.	Focuses on decomposition of organic matter on soil surface.
Cost Factor	Expensive compared to others as it involves use of external inputs and machines.	Can be expensive as it involves cost of organic inputs, labor.	Can be done at zero budget as it involves use of local materials.
Use of external sources	Relies on external source for manure, fertilizers.	Relies on external sources	Relies on locally available material. Beejamrita, Jeevamrita.
Sustainability	Negative impact on environment, degrades soil quality.	Protects soil quality and improves biodiversity.	Promotes sustainability.
Use of Pesticides	Chemical pesticides	Natural pesticides	Natural, farm-made pesticides like Dashparni ark and Neem Astra.

Bioluminescence

News: Recently, a group of MTech students noticed something unusual along the coast of Visakhapatnam which was glowing due to a unique natural phenomenon called bioluminescence.

What is Bioluminescence?

- Bioluminescence occurs due to the presence of some marine planktons called **dinoflagellates** that produce light when the water is disturbed. These planktons emit light on the ocean surface at night.
- The dinoflagellates follow a circadian cycle (24-hour cycle) and as a result, this phenomenon occurs during the night which is visible in low light conditions.
- Many marine creatures like sponges, jellyfish, worms, species of fish, arthropods, echinoderms and unicellular alga exhibit bioluminescence to either evade predators, attract prey or during mating.
- In Visakhapatnam, this phenomenon is most likely the result of an algal bloom of the dinoflagellate species of noctiluca and ceratium. This occurs when the luciferase enzyme reacts with luciferin compound in the presence of oxygen to produce a cold light.

Where else has this phenomenon been observed?

- Havelock Island in the Andamans, Thiruvanniyur beach in Chennai, Mattu beach in Karnataka and Bangaram Island in Lakshadweep. (Locate the places on your maps as well)

What are Planktons?

- Plankton are a group of marine and freshwater organisms that drift along ocean currents because they are too small or weak to swim against them.
- Their name comes from the Greek word planktos which means "wandering."
- They range in size from 2 micrometers to more than 20 centimeters.
- There are two types of plankton: phytoplankton, which are tiny plants, and zooplankton, which are tiny animals.

Wildlife Protection Act, 1972

News: Recently, The Wildlife (Protection) Act, 1972 completed 51 years since its inception.

What is WPA, 1972?

- It provides a legal framework for the protection of various species of wild animals and plants, management of their habitats, regulation, and control of trade in wild animals, plants, and products made from them
- The act also lists schedules of plants and animals that are afforded varying degrees of protection and monitoring by the government.

What are constitutional provisions for Wildlife Act?

- The **42nd Amendment Act, 1976**, Forests and Protection of Wild Animals and Birds was transferred from **State to Concurrent List**.
- **Article 51 A (g)** of the Constitution states that it shall be the fundamental duty of every citizen to protect and improve the natural environment including forests and Wildlife.
- **Article 48 A** in the Directive Principles of State policy, mandates that the State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country.

Schedules	Key Points	Animals Listed (This is not an exhaustive list)
Schedule I	It covers endangered species that need rigorous protection. A person is liable to the harshest penalties for violation of the law under this Schedule. Species under this Schedule are prohibited to be hunted throughout India, except under threat to human life or in case of a disease that is beyond recovery.	Cheetah (<i>Acinonyx jubatus</i>) Clouded leopard (<i>Neofelis nebulosa</i>) Dugong (<i>Dugong dugon</i>) Lion-tailed macaque (<i>Macaca silenus</i>) Golden langur (<i>Presbytis geei</i>).
Schedule II	Animals under this list are also accorded high protection with the prohibition on their trade.	Bison or Gaur (<i>Bos gaurus</i>). Indian elephant (<i>Elephas maximus</i>). Pig-tailed Macaque (<i>Macaca nemestrina</i>). Wild Dog or Dhole (<i>Cuon alpinus</i>).
Schedule III and IV	Species that are not endangered are included under Schedule III and IV. This includes protected species with hunting prohibited but the penalty for any violation is less compared to the first two schedules.	Schedule III - Chital (spotted deer), Bharal (blue sheep), Hyena, and Sambhar (deer). Schedule IV - Flamingo, Hares, Falcons, Kingfishers, Magpie, and Horseshoes Crabs.
Schedule V	It contains animals that are considered as vermin (small wild animals that carry disease and destroy plants and food). These animals can be hunted.	It includes only four species of wild animals: Common Crows, Fruit Bats, Rats, and Mice.
Schedule VI	It provides for regulation in the cultivation of a specified plant and restricts its possession, sale, and transportation. Both cultivation and trade of specified plants can only be carried out with the prior permission of the competent authority.	Plants protected under Schedule VI include Beddomes' cycad (Native to India), Blue Vanda (Blue Orchid), Red Vanda (Red Orchid), Kuth (<i>Saussurea lappa</i>), Slipper orchids (<i>Paphiopedilum spp.</i>) and Pitcher plant (<i>Nepenthes khasiana</i>).

- List of Bodies constituted under the Act – National Board for Wildlife, State board for Wildlife, Central Zoo Authority, National Tiger conservation Authority, Wildlife Crime control bureau.
- Protected areas under the act - Sanctuary, National Parks, Conservation Reserves, Community Reserves and Tiger Reserves.

What are challenges in implementation of WPA, 1972?

- Human-Wildlife conflict
- Illegal trade of wild animals

- Lack of coordination between the forest department and other government agencies such as the police, customs, and revenue departments.
- The penalties for wildlife crimes under the WPA are not stringent enough to act as a deterrent. The fines and sentences are often too low to make an impact on the offenders.
- Impact of climate change on wildlife habitat and lack of community participation

First ever Census of Water Bodies

News: The **Ministry of Jal Shakti** has released the report of the first census of water bodies.

What is Census of Waterbodies?

- The census was conducted in conjunction with the 6th Minor Irrigation Census for 2017-18.
- The census defines a waterbody as “all natural or man-made units bounded on all sides with some or no masonry work used for storing water for irrigation or other purposes (example industrial, pisciculture, domestic/drinking, recreation, religious, groundwater recharge etc).
- It seeks to develop a national database for all water bodies by collecting information on all important aspects of the subject including their size, condition, the status of encroachments, use, storage capacity, the status of filling up of storage etc.

Key Findings:

Data on Waterbodies:

- India has 24.24 lakh water bodies like ponds, tanks and lakes.
- West Bengal accounts for most of the water bodies and Sikkim the least.
- Andhra Pradesh has the highest number of tanks, Tamil Nadu has the highest number of lakes while Maharashtra leads in water conservation schemes
- West Bengal’s South 24 Parganas has been ranked as the top district having the highest (3.55 lakh) number of water bodies across the country.

Classification of waterbodies:

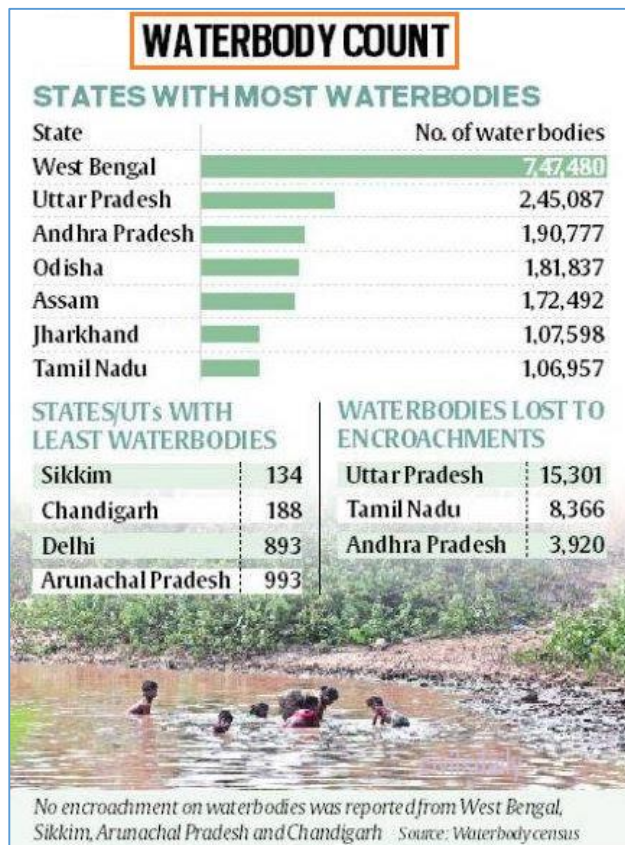
- Around 59.55% of water bodies are ponds, followed by tanks (15.7%), reservoirs (12.1%), water conservation schemes/percolation tanks/check dams (9.3%), lakes (0.9%) and others (2.5%).

Encroachment of waterbodies:

- The census also collected data on the encroachment of water bodies for the first time, revealing that 1.6% of all enumerated water bodies are encroached, with 95.4% of encroachments in rural areas and the remaining 4.6% in urban areas.

Importance of Waterbodies census:

- The census provides a comprehensive overview of the distribution of water bodies in India, highlighting the states and districts with the highest number of water bodies.
- It highlights disparities between rural and urban areas and the need for effective measures to prevent encroachment.
- The data on the encroachment of water bodies can help in identifying areas where conservation efforts are needed to protect these valuable resources.



Indoor Air Pollution

News: According to a study, India's poor indoor air quality can impair cognitive development in children under two years when brain growth is at its peak.

Background:

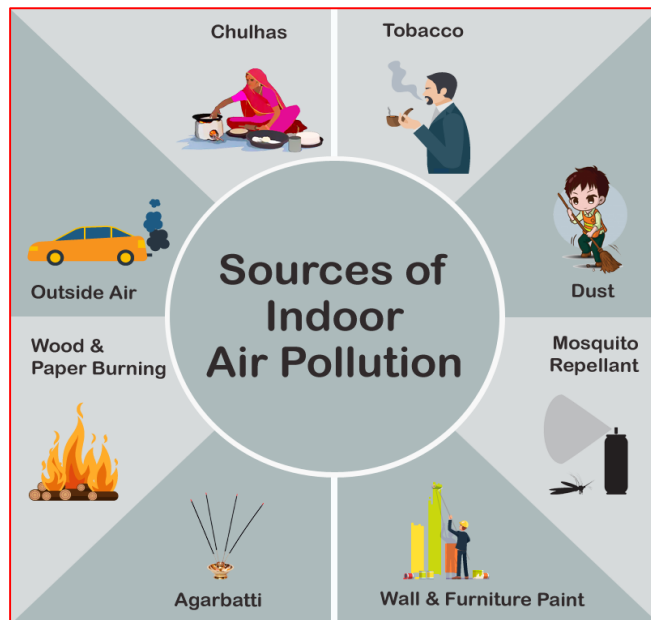
- The State of Global Air 2020 report found that over 116,000 infants in India died within a month of birth in 2019 due to air pollution, outdoor and indoor.
- Every third child in Delhi has impaired lungs making them vulnerable to metabolic diseases.

Key Findings:

- Poor air quality was found in households that used solid cooking materials such as cow dung cake.
- Very small particulate fragments (PM 2.5) in the air are a major concern as they can move from the respiratory tract into the brain.
- Infants (<2 years) from these houses had lower visual memory scores and slower visual processing speeds.
- As children grow up in polluted environments, their developing organs and bodies are affected.
- It can have long-term consequences in life of children such as lower economic productivity, increased burden on healthcare and mental health systems.

What can be done?

- Improved ventilation in houses especially those which rely on traditional way of cooking.
- Modification in design of cooking stove which doesn't release smoke (Unnat Chulha Abhiyan)
- Change in pattern of fuel use (PM Ujjwala Yojana, National Biogas and Manure Management Programme, GOBARdhan Scheme)



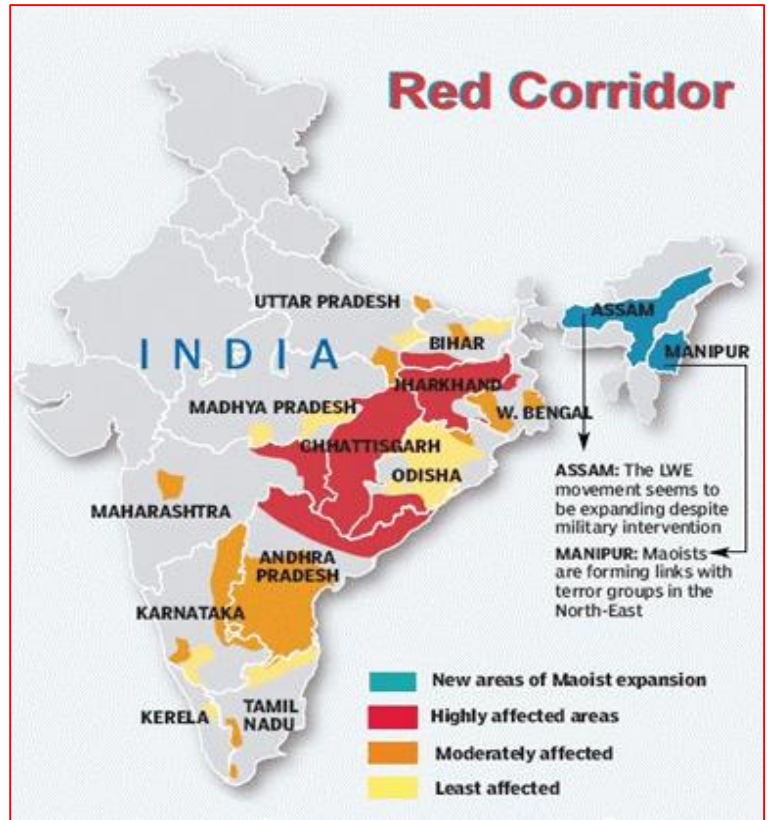
Disaster management and Security

Left Wing Extremism

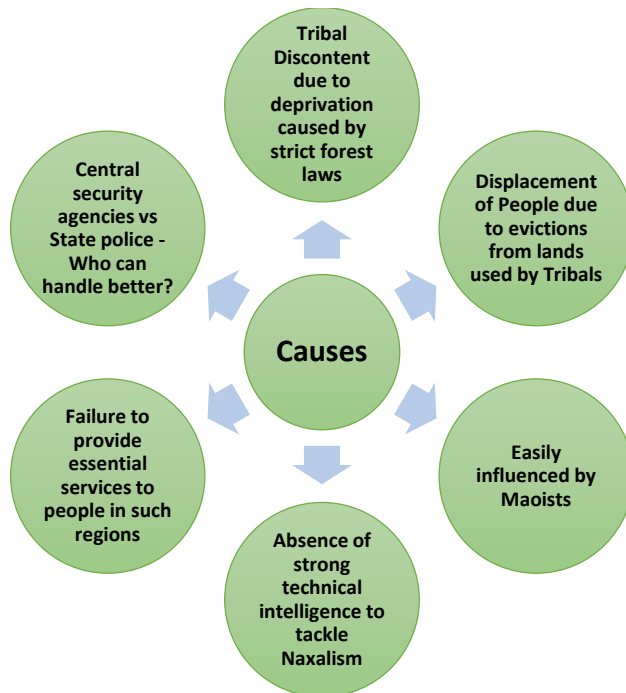
News: Ten personnel of the Chhattisgarh Police's District Reserve Guard (DRG) and the civilian driver of their vehicle were reported killed in an IED attack by Maoists in Dantewada district.

What is Left Wing Extremism?

- LWE organizations are the groups that try to bring change through violent revolution. They are against democratic institutions and use violence to subvert the democratic processes at the ground level.
- These groups prevent the developmental processes in the least developed regions of the country & try to misguide the people by keeping them ignorant of current happenings.
- It is also referred to as Naxalism as the uprising originated in a 1967 in Naxalbari (West Bengal) by the Communist Party of India (Marxist).
- Naxals are a group of people who believe in the political theory derived from the teachings of the Chinese political leader Mao Zedong.



Causing for Left Wing Extremism in India:



Status of LWE situation in country now:

- According to the government, **Maoist violence** in the country has **gone down by 77%** since 2010.

- The number of resultant deaths (security forces + civilians) has come down by 90 % from the all-time high of 1,005 in 2010 to 98 in 2022 according to data from Ministry of Home affairs.
- The government has **cut the number of districts** declared to be Naxal-affected **from over 200** in the early 2000s to just **90 now**.
- The presence of Naxals is said to be minimal to zero in Andhra Pradesh, Telangana, Odisha, Jharkhand, and Bihar, which were at one time their strongholds.

What are steps taken to contain LWE in India?

- A **dedicated left-wing extremism division** was established in 2006 under the Ministry of Home Affairs.
- Operation '**SAMADHAN**' is the Ministry of Home Affairs (MHA)'s initiative to deal with the Naxal problem. The acronym SAMADHAN stands for Smart leadership, Aggressive strategy, Motivation and training, Actionable Intelligence, Dashboard Based KPIs (key performance indicators) and KRAs (key result areas), harnessing technology, action plan for each theater, and No access to financing.
- Apart from providing **Security related expenditure** (SRE), the central government has launched the **Special Infrastructure Scheme** (SIS), which aims to strengthen local police and intelligence set ups; and **Special Central Assistance** for building infrastructure such as roads in LWE districts.
- Additionally, the Centre has maintained a **massive presence of the CRPF** in the affected states for almost two decades.
- The Centre has also unleashed the counter-terrorism **National Investigation Agency** (NIA) and the **Enforcement Directorate** on **CPI(Maoist)** cadres, leaders, and sympathisers with the aim to **choke their funding**.
- The state governments have also launched several counter-insurgency measures. For example, **Andhra Pradesh** established an elite force called **Greyhounds** to successfully crack down on Naxal leaders.

Way Forward:

- Ensure **all-round development** of the Naxal-affected areas.
- **Win the confidence of local community** by employing more local people in the administrative process.
- Encourage **state police forces to take the lead** as observed in success of tackling LWE in states of Andhra Pradesh, WB, Odisha. All these states formed special units of their police forces with personnel and officer drawn from the state.
- Build infrastructure, for example, **building mobile towers** in interior regions will facilitate local people connect with mainstream which will also help in gaining **technical intelligence**.

General Studies - 4

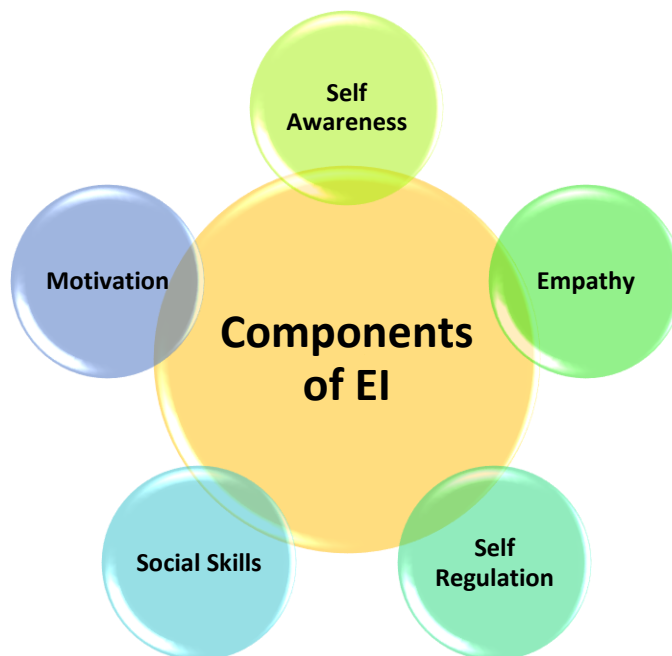
Ethics, Integrity and Aptitude

Emotional Intelligence

What is Emotional Intelligence?

- Emotional Intelligence (EI) is the ability to identify and understand one's own emotions and those of others, harness and apply them to tasks and regulate and manage them.
- The term was coined by two researchers – Peter Salovey and John Mayer but got popular from Dan Goleman's book.

What are the components of EI?



How can EI be developed in human beings?

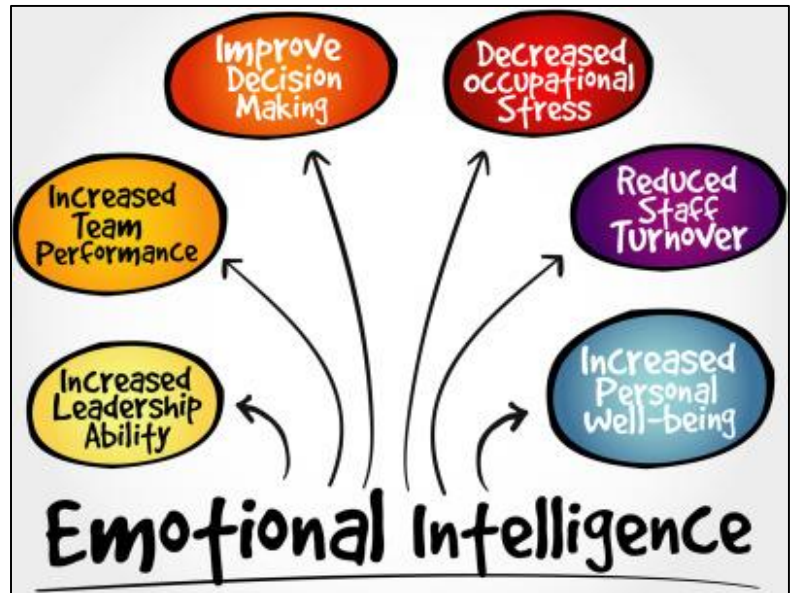
- **Self-Awareness** – Being self-aware, being conscious of one's abilities will allow an individual to know his/her strengths and weaknesses. This will help in overcoming difficult situations.
- **Stress management** – When an individual can manage stress he will be able to comfortably face strong or unpleasant emotions and better respond to his feelings. Practicing meditation, living in the moment can be ways to manage stress.
- **Taking Responsibility** - Take responsibility for one's actions is a part of emotional intelligence. One must develop courage to accept his/her deeds. This enables a person to better accept his/her faults and work upon them ultimately leading to emotional intelligence.
- **Developing Empathy** - Having empathy is critical to understand and manage emotions of other people. It will help us analyze better what other person is going through, their perspectives. This will facilitate communication and collaboration.



- **Ability to Adapt** - People should be able to adapt to changing circumstances. This can be achieved by training to manage different situations. Ability to understand and manage their emotions and of those around them help emotionally intelligent leaders to navigate through difficult circumstances.

How does EI help in making Ethical decisions?

- **Informed decision making** - Emotions help make informed decisions by allowing the decision maker to anticipate the positive and negative emotional consequences of a particular decision on the decision maker and on others. For example, PM Narendra Modi recently cited about his decision to not fall to pressure of Western nations/Pharma companies and rather relied on helping India's pharma companies to manufacture vaccines in India. Made in India vaccines – Covishield/Covaxin helped fight pandemic.
- **Conflict Resolution** - Emotional Intelligence help individuals in resolving conflict effectively. It enables the person to analyze impact of his/her decisions on other stakeholders. For example, Sardar Vallabhbhai Patel's role during integration of princely states into Indian union especially his communication with Nizam of Hyderabad is finest example of EI.
- **Objectivity** - Emotionally Intelligent person make objective decisions based on accumulated wisdom and understanding with time. For example, when Chanakya faced humiliation in the court of Dhanananda, he managed the insult calmly, planning his defeat through Chandra Gupta Maurya.
- **Moral Decisions** - Ability to regulate emotion helps a decision maker monitor his/her own emotional state, and serves to inform about whether a particular decision feels good or bad.



Conclusion

- Being emotionally intelligent can help in diverse field. As much as it is applicable to Civil servants in administration, it can be equally important for sportsperson, army officials, students, parents and even corporates in businesses.

Facts for Prelims

Assamese Gamocha

News: Recently, the 'hybrid' gamocha which was used for felicitating guests at a function sparked protests across Assam.



About:

- The 'gamosa or gamocha' is a hand-woven rectangular cotton piece of cloth with red borders and different designs and motifs.
- It is an integral part of all socio-religious ceremonies in the state and is considered an Assamese identity and pride.
- For specific purposes, it is also made of expensive materials like traditional Assamese 'Pat' silk and in different colours as well.
- The 'gamosa' meant for exchange during the 'Bihu' festival is known as 'Bihuwan'.
- It is a unique scarf found only in Assam and also received **Geographic Indication (GI)** tag.

Kangra Tea

News: Recently, Himachal Pradesh's Kangra Tea has got a **European Union Geographical Indication Tag (GI tag)**

About:

- It is a type of tea derived from the leaves, buds and tender stems of the **Camellia sinensis species** as cultivated in the Kangra valley (Himachal Pradesh, India).
- It has multi-stemmed frame, and narrow leaves.
- 'Kangra tea' has distinctive nutty, winter-green, woody floral aromas in its flavour profile. The 'Kangra tea' imparts a sweet aftertaste.

- 'Kangra tea' has a light color and high body in liquor.
- Kangra tea is grown 900-1,400 meters above sea level, on the slopes of the Dhauladhar mountain range in the Western Himalayas.
- Kangra tea' leaves contain up to 13% of catechins and up to 3% of caffeine and amino acids such as theanine, glutamine, and tryptophan. It is produced using high efficiency whole leaf-orthodox manufacture. It means that 'Kangra tea' is made up of whole leaf and flavour-enriched leaves with the highest content of polyphenols (catechins).

Exercise Cope India

News: Indian Air Force will soon kick off Cope India' exercise with the US Air Force (USAF) at the Kalaikunda airbase in West Bengal.

About:

- It is a bilateral joint exercise between Indian Air Force (IAF) and the United States Air Force (USAF).
- Cope India began in 2004 as a fighter training exercise.
- The exercise has evolved to incorporate subject matter expert exchanges, air mobility training, airdrop training and large-force exercises, in addition to fighter-training exercises.
- The exercise will further enhance operational capability and interoperability between the two air forces.

Comprehensive and Progressive Agreement for Trans-Pacific Partnership

News: Recently, the U.K. Signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

Background:

- PM Rishi Sunak cited the agreement's success as an example of "post-Brexit freedoms". The agreement will now need to be ratified by Westminster and each of the CPTPP countries.

About CPTPP:

- The CPTPP is a Free trade agreement (FTA) between Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, Peru, New Zealand, Singapore and Vietnam.
- The CPTPP was signed by the 11 countries on 8 March 2018 in Santiago, Chile.

- CPTPP removes 99% of tariffs on goods and services, just like the original TPP did, all the member countries have agreed to cut down on wildlife trafficking. That helps elephants, rhinoceroses, and marine species the most.
- It prevents environmental abuses, such as unsustainable logging and fishing. Countries that don't comply will face trade penalties.
- All 11 countries of CPTPP are members of Asia Pacific Economic Cooperation (APEC)

How plants communicate?

News: A team led by experts at Tel Aviv University has shown tomato and tobacco plants, among others, not only make sounds but do so loudly enough for other creatures to hear.

About research:

- Plants have evolved complex biochemical responses and the ability to dynamically alter their growth (and regrow body parts) in response to environmental signals including light, gravity, temperature, touch, and volatile chemicals produced by surrounding organisms.
- In 2019, researchers showed the buzzing of bees can cause plants to produce sweeter nectar. Others have shown white noise played to Arabidopsis, a flowering plant in the mustard family, can trigger a drought response.
- Researchers recorded airborne sounds produced by tomato and tobacco plants, and five other species (grapevine, henbit deadnettle, pincushion cactus, maize and wheat). These sounds were ultrasonic, in the range of 20-100 kilohertz, and therefore can't be detected by human ears.

What causes these sounds?

- The team's findings suggest that "cavitation" may be at least partially responsible for the sounds.
- Cavitation is the process through which air bubbles expand and burst inside a plant's water-conducting tissue, or "xylem".

Dhawan II engine

News: Recently, a private space vehicle company **Skyroot Aerospace** test-fired its 3D-printed Dhawan II engine.

About:

- It is a **3D-printed cryogenic engine** developed by the Skyroot Aerospace for its heavier vehicle, the Vikram II rocket.
- It uses a 3D-printed torch igniter and bellows actuated cryo-injection valve with a quick response time.
- It utilises two high-performance rocket propellants, liquid natural gas (LNG) and liquid oxygen (LoX), which require cryogenic temperatures (below -150° Celsius) for storage and operation.
- A cryogenic upper stage enhances the payload-carrying capacity of a rocket.
- The cryogenic engine series is named in honour of Dr Satish Dhawan, an Indian rocket scientist.

What is 3D printing?

- 3D printing or **additive manufacturing** is a process of making three-dimensional solid objects from a digital file.
- The creation of a 3D-printed object is achieved using additive processes.
- In an additive process, an object is created by laying down successive layers of material until the object is created. Each of these layers can be seen as a thinly sliced cross-section of the object.
- 3D printing enables you to produce complex shapes using less material than traditional manufacturing methods.

International Financial Corporation

News: The International Finance Corporation (IFC), the private sector arm of The World Bank, has said it will stop supporting investments in new coal projects.

Background:

- Previously, in 2020, IFC had unveiled a policy requiring clients to reduce their exposure to

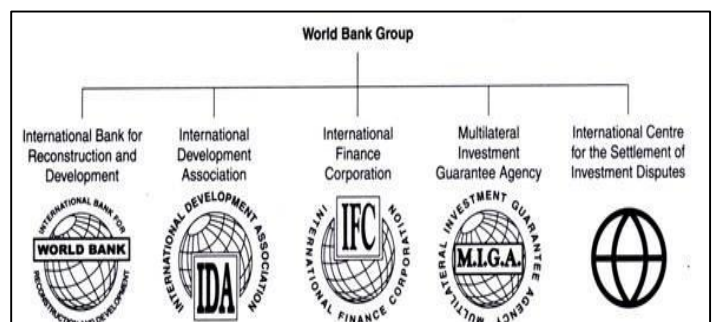


Fig. 4.1 The World Bank Group

coal projects by half by 2025, and to zero by 2030, but did not prevent new investments.

About:

- IFC is the largest global development institution focused on the **private sector in developing countries**.
- IFC, a member of the World Bank Group, advances **economic development** and improves the **lives of people** by encouraging the growth of the private sector in developing countries.
- IFC has lent close to \$5 billion to almost 88 financial institutions in India/
- HQ – Washington DC

UN Statistical Commission

News: India has been elected to the highest statistical body of the United Nations for a four-year term beginning January 1, 2024.

About:

- The United Nations Statistical Commission is a Functional Commission of the **United Nations Economic and Social Council**. It oversees the work of the United Nations Statistics Division.
- It has 24 member states and are elected by the **Economic and Social Council** on the basis of the following geographical distribution: African states (5), Asian States (4), Eastern European States (4), Latin American and Caribbean States (4), Western European and other States (7).
- HQ – New York

GI Tags

News: Recently, several products were granted GI tags across different states.

What products got GI Tag?

Product	City/State/UT
Basohli Painting	It is the first independent GI-tagged product from the Jammu region. It is famous Pahari Style miniature art known for its bright and bold colors. These are painted on paper, cloth, or wood using natural pigments and dyes.

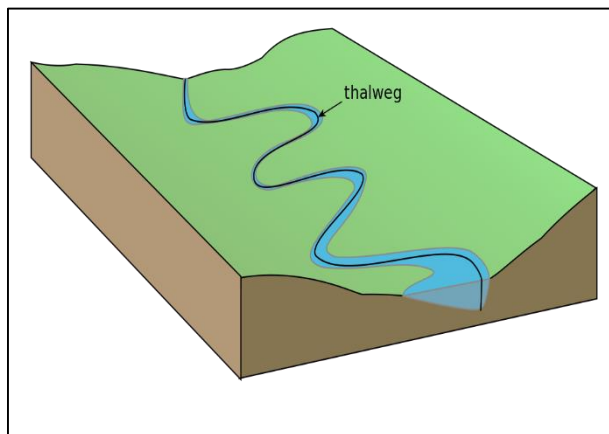
Ladakh's Carving	Wood	Ladakh's wood carving has been known for its intricate designs and unique patterns, which are mostly inspired by Buddhist themes and motifs.
Uttar Pradesh		Banarasi paan and langda mango of Varanasi, Ramnagar Bhanta (brinjal) and Chandausi's adamchini chawal (rice) Also includes Aligarh Tala, Bakharia Brassware, Banda Shazar Patthar Craft, Nagina Wood Craft, Pratapgarh Aonla, and Hathras Hing are among the recently added products from Varanasi to the GI Registry list.

Thalweg Doctrine and Water Parting Principle

News: The above terms are in news due to border conflicts between India, China and Bhutan.

What is Thalweg Doctrine?

- The Thalweg Doctrine, a part of International Law, aims to resolve **water boundary disputes**.
- The doctrine emphasises the idea of map-making by **identifying rivers as the central**



point and measuring the boundary from the **lowest point of a riverbed**.

What is Water Parting Principle?

- It identifies territory with a **concerned watershed**, where the boundary is determined by the **highest elevation** surrounding that particular lake or river segment. Both these principles have been merged in the ongoing border negotiations between China and Bhutan.

What are the important places associated with this issue?

- Amochhu River, Chumbi Valley and Mount Gipmochi (Please remember these names and mark them on your world maps)

ASBA

News: Recently, SEBI approved a framework for an Application Supported by a Blocked Amount (ASBA) like facility being made available to investors for secondary market trading.

About:

- It is a facility that **allows investors to apply for initial public offerings (IPOs) and invest in the stock market without actually transferring the money** to the IPO issuer or stockbroker upfront.
- Instead, the investor's application money is temporarily blocked in their bank account until the shares are allotted to them. This helps investors **earn interest** on their money while it is blocked and also eliminates the risk of fraud or misappropriation of funds by intermediaries.
- There will be a direct settlement with the clearing corporation (CC), without passing through the pool accounts of the intermediaries, thereby providing client-level settlement visibility to CC and thus avoiding the risk of co-mingling of clients' funds and securities.

Global Trade outlook and Statistics

News: The report was recently released by WTO.

About:

- World merchandise trade will grow slower (1.7% in 2023) before picking up to 3.2% in 2024
- Risks to global trade: Geopolitical tensions, food insecurity, potential financial instability stemming from monetary policy tightening, and increasing levels of debt

- WTO HQ – Geneva, Switzerland. Established – 1995

Biotech Kisan Scheme

News: The Government said that over 1,60,000 farmers have received benefits during the Biotech-KISAN scheme in the past one year.

About:

- It was launched by Department of Biotechnology, Ministry of Science and Technology and is a Pan-India hub-spoke model.
- It seeks to counsel and provide solutions to farmers on problems related to water, soil, seeds, and marketing.
- It stimulates entrepreneurship and innovation in farmers empower women farmers and identifies and promotes local farm leadership in both genders.
- It follows a problem solving approach where it understands the problem of the local farmer, then link available science and technology to the farm, and provide scientific solutions to those problems.

Jingrwai Lawbei

News: BJP Rajya Sabha MP Rakesh Sinha on Thursday presented his development report on Kongthong village in Meghalaya, India's only whistling village, to Prime Minister Narendra Modi at his residence.



Instructions – You can use such unique examples of traditions in India, efforts made to revive them and make them relevant.

Background:

- The village was adopted by the MP under the Sansad Adarsh Gram Yojana (SAGY)

About:

- Kongthong is located in the East Khasi Hills in Meghalaya and is popular as the '**whistling village**' due to its unique tradition of '**Jingrwai Lawbei**' under which mothers create a **tune for their newborns**.
- These tunes are often used as names. Kongthong people belong to the **Seng Khasi Tribe** and speak **Khasi language**. According to Census 2011, the village has a population of 567, out of which 275 are males and 275 are females, and a literacy rate of 55%.

Prosopis Chilensis

News: A recent study has revealed that the native vegetation and biodiversity in the Gulf of Mannar are under threat from an alien invasive plant, Prosopis chilensis.



What are invasive species?

- An invasive species is an organism that is not indigenous, or native, to a particular area and causes harm to the native species. They are capable of causing extinctions of native plants and animals, reducing biodiversity, competing with native organisms for limited resources, and altering habitats.
- They can be introduced to an area by ship ballast water, accidental release, and most often, by people.

About Prosopis Chilensis:

- The Prosopis chilensis is also known as **Chilean mesquite**.
- It is a **small to medium-sized legume tree** that grows up to 12 m in height and 1 m in diameter.
- It is a drought-resistant plant native to the arid regions of four South American countries namely Argentina, Bolivia, Chile, and Peru.

Management Effectiveness Evaluation

News: According to the 5th cycle of Management Effectiveness Evaluation (MEE) carried out by the Centre the MEE rating of Nagarjunasagar- Srisaillam Tiger Reserve improves from 'Good' to 'Very Good'.

About:

- According to the Wildlife Institute of India, MEE is defined as the **assessment of how well protected areas** are being managed. Primarily, whether they are protecting their values and achieving the goals and objectives agreed upon.
- The ratings are assigned in **four categories** - Very Good, Good, Fair, Poor.
- The criteria or indicators of for assessing India's Protected Areas has been adopted from **IUCN's World Commission on Protected Areas framework** of MEE.
- The government has been using the MEE to assess tiger reserves across the country since its inception in 2006.
- Out of the 53 tiger reserves notified at present, only 51 tiger reserves covering a total area of 73,765 square kilometers have been assessed in this 5th cycle.
- The **Periyar Tiger Reserve** in Kerala gets Top Rank in this cycle.

Uranium 241

News: Recently, physicists in Japan while studying the atoms of heavy elements discovered a previously unknown isotope of uranium uranium-241.

About Uranium 241:

- It has an atomic number of 92 and a mass number of 241.
- The researchers also calculated that uranium-241 likely has a half-life of just 40 minutes.

How was Uranium 241 found?

- The researchers accelerated uranium-238 nuclei into plutonium-198 nuclei at the KEK Isotope Separation System (KISS).
- In a process called multinucleon transfer, the two isotopes exchange protons and neutrons. The resulting nuclear fragments contained different isotopes.

The Language Friendship Bridge

News: The Indian Council for Cultural Relations (ICCR) has launched a project called 'The Language Friendship Bridge' to train people & create a pool of experts in 10 languages (like Kazakh, Uzbek, Burmese, and Sinhalese) that are spoken in countries with which India has historical & cultural ties.

Importance:

- This move is significant as it reflects India's interest in expanding its cultural and economic footprint in nations with whom it has historical ties, and also recognizes the importance of promoting language learning and cultural understanding in order to strengthen ties with neighboring countries.

State Energy Efficiency Index 2021-22

News: The Ministry of Power has released the State Energy Efficiency Index (SEEI) 2021-22.

About SEEI:

- SEEI 2021-22 has an updated framework of 50 indicators aligned with national priorities to track outcomes and impacts of state-level energy efficiency initiatives.
- It is developed by Bureau of Energy Efficiency (BEE) in association with the Alliance for an Energy-Efficient Economy (AEEE)
- Its main objective is to Drive decarbonisation efforts in states and outlining recommendations to help states drive change in energy efficiency, which will contribute towards the fulfilment of SDGs and NDC.

Key Findings:

- Front Runner Category (>60 points) - Karnataka (Top performer), Kerala, Andhra Pradesh, Rajasthan and Telangana
- Achiever Category (50-60 points) - Assam (Top performer), Haryana, Maharashtra, Punjab.

TEMPO Mission

News: Recently, a SpaceX Falcon 9 rocket launched the Tropospheric Emissions Monitoring of Pollution (TEMPO) instrument from Florida.

About:

- TEMPO is a **NASA device** that can track **air pollution** over North America from space. It will allow scientists to monitor air pollutants and their emission sources down to the neighbourhood level.

- The TEMPO instrument is a grating spectrometer, sensitive to visible and ultraviolet wavelengths of light.

Key features and applications:

- TEMPO is hosted on an Intelsat communications satellite in geostationary orbit.
- It will be able to measure atmospheric pollution down to a spatial resolution of 4 square miles or neighbourhood level.
- TEMPO will have multiple applications from measuring levels of various pollutants to providing air quality forecasts and helping the development of emission-control strategies
- More than 40% of the US population live in places with unhealthy levels of particle pollution or ozone, and air pollution is blamed for some 60,000 premature deaths a year.

United Nations Democracy Fund

News: India is the **fourth highest donor** to the UN Democracy Fund (UNDEF).

About:

- UNDEF was established in 2005 by UN Secretary-General Kofi A. Annan as a United Nations General Trust Fund to support democratization efforts around the world.
- It was welcomed by the General Assembly in the Outcome Document of the 2005 World Summit.
- UNDEF plays a unique role in complementing the UN's other work with governments to strengthen democratic governance around the world.
- The majority of UNDEF funds go to local civil society organizations (CSOs)

India's support to UNDEF:

- India has contributed over USD 32 million since its inception (2005).
- US (1st), Sweden (2nd), and Germany (3rd) are top 3 donors.

Surface-enhanced Raman spectroscopy(SERS)

News: Scientists have developed a new low-cost substrate that can increase the sensitivity of Surface-enhanced Raman spectroscopy(SERS).

What is SERS?

- Surface-enhanced Raman spectroscopy (SERS) has emerged as a vital analytical and sensing tool for detecting molecules. It can aid rapid detection of toxic pollutants present in water, food, etc.
- When molecules are near the noble metal nanoparticles of gold, silver, platinum, etc, their Raman signals will substantially increase, which can help detect trace amounts of analyte molecules. However, as noble metals are expensive, have poor uniformity, and cannot be reused, there is a quest for alternative SERS active substrates involving non-noble metals.

What has been developed?

- Researchers have developed an efficient SERS substrate based on the unique sea urchin morphology of molybdenum trioxide for the rapid detection of industrial pollutants.
- The substrate will help in the detection of toxic dyes and chemicals.

Mircha Rice

News: Recently, Mircha rice of Bihar's West Champaran was awarded the GI tag.

About:

- Grown in West Champaran District of Bihar, the size and shape of the grain appears like that of **black pepper**. Hence, they name Mircha or Marcha rice.
- The rice is famous for its aroma, palatability and its aromatic chura (rice flakes) making qualities. The cooked rice is fluffy, non sticky, sweet and easily digestible with a popcorn-like aroma.

Short-Beaked Echidnas

News: Short-beaked echidnas living in the **Dryandra Woodland** in **Western Australia** use a unique method to beat the searing heat during the summer.

About:

- Short-beaked echidna is one of four living species of echidna. It is covered in fur and spines and has a distinctive snout and a specialized tongue, which it uses to catch its insect prey (ant and termite) at a great speed.
- It has extremely strong front limbs and claws, which allow it to burrow quickly with great power. As it needs to be able to survive underground, it has a **significant tolerance to**

high levels of carbon dioxide and low levels of oxygen.

- Researchers found that blowing snot bubbles can help the Short-beaked echidnas cool down.
- Their nose has about 100 mucous-secreting glands. When an animal blows mucus balloons that burst over its nose, evaporation cools the blood vessels inside the snout. Circulating this blood through the body brings down the body temperature.



International Big Cats alliance

News: PM Modi recently launched the International Big Cats Alliance (IBCA) during his visit to Karnataka.

About:

- The focus of the international big cat alliance will be on the conservation of the **world's seven major big cats**, including tiger, lion, leopard, snow leopard, puma, jaguar and cheetah. Prime Minister remarked and explained that countries that are home to these cats will be a part of this alliance.
- Under the alliance, the member countries will share their experiences, help their fellow countries quicker, and lay emphasis on research, training, and capacity building.

Toque Macaque

News: Sri Lanka is exploring the possibility of exporting 1,00,000 Toque Macaque monkeys to China.

About:

- It is a reddish-brown-coloured Old World monkey endemic to Sri Lanka, where it is locally known as the "**rilewa**" or "**rilawa**".
- Scientific Name: *Macaca sinica*
- They are **native** and **endemic** exclusively to Sri Lanka.

- IUCN status – **Endangered**



Unique Features:

- The most characteristic feature of this primate is the **toque-like swirl of hair** on its head top.
- Males are physically larger than females.
- They are fitted with exceptionally long, thin tails. They have the distinction of being the smallest species belonging to the genus *Macaca* with the longest tails relative to their body size.

Solar Energy Corporation of India

News: Recently, the Solar Energy Corporation of India Limited (SECI) has been accorded the status of **Miniratna Category-I** Central Public Sector Enterprise (CPSE).

About SECI:

- It is the primary implementing agency of the Ministry of New and Renewable Energy, Govt. of India for Renewable Energy schemes/projects.
- It has awarded Renewable Energy (RE) project capacities of **over 56 GW**.
- It enjoys the **highest credit rating** of AAA by ICRA.

What are benefits of getting this status?

- Increased financial powers for investments, greater autonomy in operations, improved corporate governance, and competitive advantage, among others.

What are criteria for grant of Miniratna status to CPSE's?

- **Miniratna Category-I status:** The CPSEs which have made a profit in the **last three years continuously**, with a pre-tax profit of 30 crores or more in at least one of the three years and have a positive net worth are

eligible to be considered for grant of Miniratna-I status.

- **Miniratna Category-II status:** The CPSEs which have made a profit for the last three years continuously and have a positive net worth are eligible to be considered for grant of Miniratna-II status.
- Miniratna CPSEs should have not defaulted in the repayment of loans/interest payments on any loans due to the Government.
- Miniratna CPSEs shall not depend upon budgetary support or Government guarantees.

E-Prosecution Portal

News: The Ministry of Home Affairs(MHA) e-prosecution portal has added a **new feature** that will **fix the accountability of government lawyers**. The system will send alerts to senior officers whenever a public prosecutor seeks a stay in a criminal case more than twice.

About:

- The E-Prosecution portal is managed by the Government of India under the Digital India Mission.
- The portal facilitates communication between the police department and the prosecution directorate as part of the **Interoperable Criminal Justice System (ICJS)**.
- It links and enables the seamless transfer of data and information among different pillars of the criminal justice system such as courts, police, jails and forensic science laboratories.

Magnetoresistance

News: Recently, researchers in the UK, led by Nobel laureate Andre Geim have found that graphene displays an anomalous giant magnetoresistance (GMR) at room temperature.

What is GMR?

- Magnetoresistance is the tendency of a material to change the value of its electrical resistance in an externally-applied magnetic field.
- Giant magnetoresistance (GMR) is a quantum mechanical magnetoresistance effect observed in multilayers composed of alternating ferromagnetic and non-magnetic conductive layers.

Applications of GMR:

- GMR is used in hard disk drives, magneto resistive RAM in computers, biosensors, automotive sensors, microelectromechanical systems, and medical imagers.

Important facts about Graphene:

- It is composed of monolayer of closely packed carbon atoms that form a hexagonal honeycomb lattice.
- It is the building-block of Graphite.
- It is the thinnest, most electrically and thermally conductive material in the world.
- It is also tremendously strong—about 200 times stronger than steel and flexible, as well as transparent.
- It is also known as a wonder material due to its vast potential in the energy and medical world.

Gond Painting

News: Gond painting, popular folk art of the Gond tribe in Madhya Pradesh, has been awarded the Geographical Indication (GI) tag.

About:

- It is one of the most famous artworks of the Gond tribal community, done to preserve, remember, and communicate the rich culture.
- Digna and Bhittichitra paintings have evolved into present-day Gond paintings.
- Paintbrushes and Handmade paper, canvas, natural and synthetic colours are the tools and materials used.



What are themes of Gond painting?

- Local flora and fauna, deities, urban culture, and daily life. These paintings are geometrically drawn on the walls of the hut. It also includes portraits of Lord Krishna, crows with pots, young boys, and girls.
- It's signature patterns involve Dots, fine lines, curved lines, dashes, fish scales, drops of water, seed shapes, and geometrical shapes.

About Gond Tribes:

- Gonds are one of the largest tribal groups in India. Gond people are spread across many states of India – Madhya Pradesh, Andhra Pradesh, Telangana, Chhattisgarh, Maharashtra, Bihar, Odisha, Uttar Pradesh.
- The name Gond comes from “Kond” meaning green mountains. Their main occupation is Agriculture or daily wages

Wheat Blast

News: Recently, scientists have warned that the fungus **Magnaporthe oryzae**, which is destroying South American wheat crops, could spread worldwide.

About:

- It is a **fungal disease** in tropical and subtropical wheat production regions caused by *Magnaporthe oryzae*.
- The fungus infects wild and cultivated grasses, most notably rice and wheat.
- It spreads through infected seeds, and crop residues as well as by spores that can travel long distances in the air.

Ethylene Oxide

Ethylene Oxide



WHAT:

Ethylene oxide (EIO), a known human carcinogen, is a colorless, flammable gas that is used to sterilize medical equipment and to make chemicals used in household and personal care products.

FOUND:

EIO is found in highest concentrations in manufacturing plants that create it. It is used in hospitals to sterilize medical equipment. Smaller quantities are found in fragrances, cosmetics, shampoos, and is found in cigarette smoke.

SCIENCE:

The International Agency for Research on Cancer classifies EIO as a human carcinogen. Multiple studies show that female hospital and manufacturing workers exposed to EIO had elevated incidences of breast cancer.

TOP TIP:

Workers exposed to EIO should wear protective equipment. Avoid first- and secondhand cigarette smoke. Avoid personal care products with ethoxylated ingredients.

News: The European Commission has classified ethylene oxide as **carcinogenic, mutagenic** and **toxic** for reproduction (earlier it was classified as a fumigant)

About:

- At room temperature, ethylene oxide is a **flammable colourless gas** with a **sweet odour**.

- It is used primarily to produce other chemicals, including antifreeze. In smaller amounts, ethylene oxide is used as a pesticide and a sterilizing agent. The ability of ethylene oxide to damage DNA makes it an effective sterilizing agent but also accounts for its cancer-causing activity.

Implications:

- Agricultural products that are exported to EU will now be **mandatorily tested**.

Mangrove Pitta Birds

News: Forest officials in Odisha's Bhitarkanika have sighted 179 mangrove pitta birds, which are known for their exotic and vibrant colours. A first of kinds survey was conducted.



About:

- It is a species of passerine bird in the Pittidae family native to Southeast Asia and South Asia.
- Scientific Name - Pitta megarhyncha
- Distribution - Bangladesh, India, Indonesia, Malaysia, Myanmar, Singapore, and Thailand
- Habitat - It is found in mangrove and nipa palm forests where it feeds on crustaceans, mollusks and insects.
- IUCN status - **Near Threatened**

YZ Ceti b

News: Recently, astronomers have detected a repeating radio signal from the YZ Ceti b exoplanet that suggests the presence of a magnetic field around it.

About:

- It is a rocky earth-sized exoplanet rotating around a small red dwarf star.
- It is barely 12 light-years from Earth.

- The astronomers determined that the planet takes just a couple of Earth days to circle its star.

Importance of Magnetic field:

- Indicates survival of a planet's atmosphere.
- The magnetic field protects the planet's atmosphere from being eroded by the charged particles blowing in from its star.

Hakki Pikki Tribe

News: Around Thirty-one tribals belonging to 'Hakki-Pikki' are stranded in Sudan.

About:

- They are a semi-nomadic tribal group belonging to the state of **Karnataka**.
- In Kannada, the word 'Hakki' stands for 'bird' and 'Pikki' stands for the verb 'to catch'.
- The community is known as the 'bird catcher,' which is their traditional occupation.
- Their mother tongue was designated as '**Vaagri**' by scholars.
- UNESCO has listed 'Vaagri' as one of the endangered languages.
- They have **traditional medical knowledge that is in demand in several African countries**.
- The community resided in the dense jungles for a long time and created its own plant and herb-based medicine systems.

National Panchayat Awards



News: The President of India recently presented the National Panchayat Awards and inaugurated the National Conference on Incentivization of Panchayats in New Delhi.

About:

- The award was given to the best-performing Panchayats by assessing their performance in the attainment of SDGs. These annual awards were first instituted in 2011.
- The Awardee Panchayats under various categories of National Panchayat Awards-2023 named:
- Deen Dayal Upadhyay Panchayat Satat Vikas Puraskar(DDUPSVP) for the performance under individual LSDG themes,
- Nanaji Deshmukh Sarvottam Panchayat Satat Vikas Puraskar(NDSPSVP) for the aggregate performance under all 9 LSDG themes and green initiative-related Special Categories.
- Gram Urja Swaraj Vishesh Panchayat Puraskar and Carbon Neutral Vishesh Panchayat Puraskar.

Key Highlight of meeting:

- During the event Union Minister of Rural Development launched the **GS NIRNAY**, National Initiative for Rural India to Navigate, InnovAte and Resolve Panchayat decisions, a mobile application.
- It provides easy access to critical information discussed during a Gram Sabha.
- This would bring in **more transparency** and **increase efficiency** in the functioning of Panchayats, which play a vital role in decentralized participatory democracy.

Electromagnetic Ion Cyclotron Waves

News: Scientists have identified Electromagnetic Ion Cyclotron (EMIC) waves, a form of plasma waves in the Indian Antarctic station, Maitri.

Background:

- These waves play an important role in precipitation of killer electrons (electrons having speed close to speed of light, which form the radiation belt of planet Earth), which are hazardous to space-borne technology/instruments.
- The study can help understand the impact of energetic particles in the radiation belts on the low orbiting satellites.

What are EMIC waves?

- They are the discreet electromagnetic emissions observed in the Earth's magnetosphere.
- These waves are generated in the equatorial latitudes and propagate along magnetic field

lines to its footprint in the high latitude ionosphere.

- Their signatures can be recorded in both space as well as ground-based magnetometers.

What are Plasma waves?

- Plasma waves are a type of electromagnetic wave that propagates through plasma, which is a state of matter. Plasma is formed when a gas is heated to high temperatures or subjected to strong electric fields, causing its atoms to become ionised, meaning they lose or gain electrons and become charged particles.
- More than 99% of the matter in the visible universe consists of plasma. Our Sun, solar wind, the interplanetary medium, near-Earth region, magnetosphere, and the upper part of our atmosphere all consist of plasma.

Mission 50K-EV4ECO

News: The Small Industries Development Bank of India (SIDBI) has launched Mission 50K-EV4ECO. The initiative will fund the purchase of 50,000 EVs in the country to spur the local ecosystem.

About:

- The pilot phase of 'Mission 50K-EV4ECO' will increase the uptake for two, three and four-wheelers through direct (to MSMEs) and indirect lending (to NBFCs)
- This scheme is the precursor to EVOLVE scheme by SIDBI-World Bank
- The Indian automobile industry ranked fifth largest globally and is expected to become the third largest by 2030. However, the sale of electric vehicles accounts for just 1% of total sales, currently.

Helopeltis Theivora

News: The tea mosquito bug (Helopeltis Theivora) is spreading rapidly and affecting tea production in both low and high-elevation plantations in Southern India.

About:

- It is a major sucking pest of tea (Camellia sinensis L.) in most tea-producing countries. The nymphs and adults of the TMB suck the sap from tender leaves, buds and young shoots, which results in heavy crop losses.
- It can be controlled by using synthetic pesticides. However, the 2014 Plant Protection Code (PPC) from the Tea Board of India restricts the use of harmful pesticides to

keep the tea safe and free from harmful pesticides

SATHI Portal and app

News: Recently, the Union Agriculture and Farmers Welfare Minister launched the SATHI Portal and Mobile App.

About:

- The **Seed Traceability, Authentication and Holistic Inventory** (SATHI) portal is a Centralized Online System designed to deal with the challenges of seed production, quality seed identification and seed certification.
- It has been developed by the **National Informatics Centre** (NIC) in collaboration with the **Union Ministry of Agriculture and Farmers Welfare** on the theme of 'Uttam Beej – Samriddh Kisan.

How will it work?

- There will be a QR code under this system, through which the seeds can be traced.
- It will ensure a **quality assurance system**, and **identify the source of seed** in the seed production chain.
- The system will consist of integrated 7 verticals of the seed chain - Research Organisation, Seed Certification, Seed Licensing, Seed Catalogue, Dealer to Farmer Sales, Farmer Registration and Seed DBT.
- Seeds with **valid certification** can only be sold by valid licensed dealers to centrally registered farmers who will receive a subsidy through DBT directly into their pre-validated bank accounts.

Indian Skimmers

News: The breeding of Indian Skimmers has been recorded for the first time in Satkosia WS in Odisha.

About:

- It flies low over the water surface with its bright orange beak agape, the knife-like lower bill slicing the liquid. Any fish or shrimp too slow to dodge is snapped up.
- It occurs primarily on larger, sandy, lowland rivers, around lakes and adjacent marshes and, in the non-breeding season, in estuaries and coasts.
- About 20% of the total population of fewer than 2,500 birds nest along river Chambal.

Villagers here call it **pancheraa**, that which tears water.

- IUCN status – **Endangered**



ARTSENS Device

News: Researchers at the Indian Institute of Technology-Madras (IIT-M) recently developed a device called 'ARTSENS' to assess the health and age of blood vessels which will help to provide early screening for cardiovascular diseases.

About:

- It is a novel, non-invasive device to assess the health and age of blood vessels and thereby provide early screening for cardiovascular diseases.
- It has been developed by Healthcare Technology Innovation Centre at IIT Madras.
- It is intended for regular medical check-ups, even by non-experts, to evaluate and anticipate vascular health.
- It is powered by a proprietary non-imaging probe and an intelligent computing platform.

What can it do?

- It can assess the effect of molecular and protein-level changes in the vessel wall caused due to disease and ageing by measuring the material property in a completely non-invasive and accurate manner.
- The device comprises pressure cuffs to be affixed at the upper arm and thighs and a probe applied to the surface of the neck to detect the carotid artery.
- It measures carotid arterial stiffness, aortic pulse wave velocity and central blood pressure, all three being important markers of cardiovascular health.

CARICOM

News: Dr. S Jaishankar recently co-chaired the 4th India-CARICOM ministerial meeting with his Jamaican counterpart.

About CARICOM:

- CARICOM, which stands for Caribbean Community, is the oldest surviving integration movement in the developing world.
- It is an organization of Caribbean countries and dependencies originally established as the Caribbean Community and Commons Market in 1973 by the **Treaty of Chaguaramas**.
- It works to promote economic integration and cooperation among its members, it ensures that the benefits of integration are equitably shared.



Members:

- It has 15 members; Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago.
- Anguilla, Bermuda, the British Virgin Islands, the Cayman Islands, and the Turks and Caicos Islands have associate member status
- While Aruba, Colombia, the Dominican Republic, Mexico, Puerto Rico, and Venezuela maintain observer status.
- **Secretariat:** The CARICOM Secretariat in **Georgetown, Guyana**, is the principal administrative organ of the Community and is headed by a Secretary General who is the Chief Executive Officer of the Commun

Digital Science Parks

News: Recently, PM Modi laid the foundation stone for India's first Digital Science Park in Thiruvananthapuram, Kerala.

About:

- Digital Science Park is a multidisciplinary cluster-based interactive-innovation zone focused on digital technologies.
- It will be completed in 2 years and its key focus areas will be Artificial Intelligence (AI), robotics, electronics, smart hardware, sustainable and smart materials
- It has High-end research labs and facilities including cleanrooms, material characterization facilities, Blockchain and cybersecurity labs etc.

16th Civil Services Day

News: April 21st is Celebrated as National Civil Services Day every year.

Background:

- Independent India's first Home Minister Sardar Vallabhbhai Patel addressed probationers of Administrative Services Officers on this day in 1947.
- Also known as the Iron Man of India, Sardar Vallabhbhai Patel referred to administrative officers as **"Steel Frame of India"**

About:

- It acknowledges the contribution of civil servants in public administration.
- It looks to motivate and appreciate the work of civil service officers, evaluate the work of various departments, and award outstanding individuals and groups.
- PM's Awards for Excellence in Public Administration are presented on this day in various categories. For ex, PM Gati Shakti's national master plan (launched: 2021) has received the award this time in the 'Innovation (Central)' category.

Which are the articles that govern Civil services in India?

- Article 309, Article 310, Article 311, Article 312, and Article 315

Operation Kaveri

News: Recently, India launched 'Operation Kaveri' to evacuate its nationals from conflict-torn Sudan.

About:

- It is a rescue operation being carried out by the Indian Government to bring back Indian citizens stranded in Sudan.
- According to the official data, the number of Indians in Sudan is around 4,000.
- As part of the operation, two C-130 aircraft and the navy ship **INS Sumedha** is on standby to safely evacuate stranded Indians.
- Sudan has been witnessing deadly fighting between the country's army and a paramilitary group, the paramilitary Rapid Support Forces (RSF) that has reportedly left several hundred's dead.
- The clashes were triggered by disagreement over an internationally backed plan to form a new civilian government four years after the fall of autocrat Omar al-Bashir and two years after the military coup. Both sides accuse the other of thwarting the transition.

Ningaloo Eclipse

News: Recently, The Ningaloo Eclipse was witnessed. It is a rare 'hybrid solar eclipse', caused by the curvature of the earth's surface and a shift from annular to total eclipse.



What is Solar eclipse?

- A solar eclipse is a natural phenomenon that occurs when the Moon passes between the Sun and the Earth, casting a shadow on the Earth's surface, resulting in a temporary darkening of the Sun.

Types of Solar eclipse:

- Total Solar eclipse – It occurs when the Moon completely blocks out the Sun while passing between the Earth and the Sun.
- Annular

- Partial
- Hybrid

What is Hybrid solar eclipse?

- A hybrid solar eclipse occurs when the eclipse is **total from some locations on Earth** and **annular from others**, due to the viewer's position relative to the Moon's shadow.
- It means that for some observers, the Moon appears to fully cover the Sun, resulting in a total solar eclipse, while for others, the Moon only partially covers the Sun, resulting in an annular solar eclipse.
- A total solar eclipse was visible in Australia, Timor-Leste and Indonesia (West Papua and Papua). At the same time, a partial solar eclipse was visible in southeast Asia, East Indies, Australia, Philippines and New Zealand. It was not visible in India.
- It has been named as Ningaloo, a part of **western Australia** from which the eclipse was most visible. The Ningaloo region is also designated as a **UNESCO World Heritage Site**.

Manamadurai Pottery

News: The Manamadurai pottery has recently been given a Geographical Indication (GI) tag.

About:

- Manamadurai in Sivagangai district, Tamil Nadu is known for pottery making.
- The **Vaigai River** enriches the clay used for the Manamadurai pottery. A unique type of clay is also sourced from other water bodies to make these pots.
- The pot is painted in different colours. While making these pots, the five elements of nature namely earth, water, fire, sun and air are used.
- Raw materials used - Soil, water, sand, lead, graphite, calcium lime, ash, red lead, sodium silicate, manganese, iron, and plasticizing.

Zero Shadow Day

News: Recently, **Bengaluru** experienced a 'Zero Shadow Day', when vertical objects appear to cast no shadow.

About:

- It is a sub-solar point where the sun is **directly overhead at a particular latitude**.

- When the sun is at the zenith (the highest point in the sky) its rays will be hitting a particular point exactly perpendicular to the surface. This will make the shadow of a person exactly under him, making it look like there are no shadows.
- There are two zero shadow days every year in May and July/August, observed in places that lie between the tropic of Cancer and the tropic of Capricorn.
- One falls during the Uttarayan (when the Sun moves northwards), and the other is during Dakshinayan (when the Sun moves southwards).
- It lasts for a small part of a second, but the effect can be seen for a minute to a minute-and-a-half.

National Health Accounts Estimates 2019-20

News: The National Health Accounts Estimates report for India (2019-20) has been released, revealing various health outcomes.

Key Findings:

- **Total Health Expenditure** - 3.6% (increased)
- **Government Health Expenditure** - Increased from 1.13% (2014-15) to 1.35% (2019-20)
- **Government Health Expenditure as % of Total Health Expenditure** - increased from 29% (2014-15) to 41.4% (2019-20)
- **Share of primary healthcare in Current Government Health Expenditure (CGHE)** - Increased from 51.3% in 2014-15 to 55.9% in 2019-20. National Health Policy 2017 where states that two-thirds of public health spending must be in Primary Health systems.
- **Share of Out-Of-Pocket expenditure in Total Health Expenditure** - Reduced from 62.6% in 2014-15 to 47.1% in 2019-20. It shows progress towards ensuring financial protection, and improved Health coverage of Indians.
- **Per capita Government spending on healthcare** - Doubles (from Rs. 1,108 to Rs. 2,014 between 2014-15 to 2019-20)
- **Private health insurance share** - It has been increasing.
- **Social Security Expenditure (SSE) on healthcare** - Increased (from 5.7% in 2014-15 to 9.3% in 2019-20). This increase in social

security has a direct impact on reducing out-of-pocket payments.

Nuclear Liability

News: Recently, talks between Indian and French officials over several issues, including liability, for the construction of six nuclear power reactors in Maharashtra's Jaitapur haven't yielded positive outputs.

- India's Civil Liability for Nuclear Damage Act (CLNDA) was one of the reason including others.

What is Nuclear Liability?

- It refers to the **legal responsibility** for damages and compensation in case of a nuclear accident or incident. It involves determining who is responsible for the damages caused and who will pay for the compensation of those affected.
- India's Civil Liability for Nuclear Damage Act (CLNDA)

What is India's Civil Liability for Nuclear Damage Act?

- It is an Indian law enacted in 2010 to provide a **civil liability regime** for nuclear damage in India. Key provisions of the Act are as follows:
- It provides for strict and no-fault liability on the operator, where it will be held liable for damage regardless of any fault on its part.
- Concept of supplier of equipment's liability over and above that of the operator's
- It specifies the liability of nuclear operators
- The compensation payable in the event of a nuclear incident and the process for claiming compensation
- Establishes the Nuclear Damage Claims Commission to adjudicate claims for compensation
- Additionally, it provides for Nuclear Liability Fund to provide financial support in the event of a nuclear incident.

Pygmy Hog

News: The world's rarest and smallest wild pig species is "extremely susceptible to extinction" from African Swine Fever due to its small populations and limited range.

About:

- It is one of the very few mammals that build its own home, or nest, complete with a 'roof'.

- It is an **indicator species** as its presence reflects the health of its primary habitat, tall and wet grasslands.
- Habitat - It prefers undisturbed patches of grassland dominated by early successional riverine communities, typically comprising dense tall grass intermixed with a wide variety of herbs, shrubs and young trees.
- Currently, the viable population of this pig in the wild is in the **Manas Tiger Reserve in Assam**.
- IUCN Red List - **Critically Endangered**
- Wildlife Protection Act, 1972: Schedule I



Quasars

News: According to a new study Quasars the brightest and the most powerful objects in the universe - have a violent origin story.

About:

- The quasi-stellar radio sources (Quasars) were first discovered six decades ago.
- These are very luminous objects in faraway galaxies that emit jets at radio frequencies.
- They are located in supermassive black holes, which sit in the centre of galaxies.
- These are formed by the energy emitted by materials spiralling around a black hole right before being sucked into it.
- Most quasars are larger than our solar system. A quasar is approximately 1-kilo parsec in width.
- When galaxies collide, it pushes the gas from the outer reaches of the galaxies to the centre. As the supermassive black hole gorges on the gas, it releases ferocious fountains of energy in the form of radiation, leading to the quasar.

SUPREME Initiative

News: Recently, the Union Minister of Science and Technology launched the SUPREME initiative to provide financial support for the upgradation and maintenance of **analytical instrumentation facilities** (AIFs).

About:

- The Support for Up-gradation Preventive Repair and Maintenance of Equipment (SUPREME), is a first-of-its-kind programme by the government.
- It extends financial support for repair, upgradation, maintenance, retrofitting, or acquiring additional attachments to increase the functional capabilities of existing analytical instrumentation facilities.
- Such facilities at institutions recognised by the University Grants Commission (UGC) are eligible to apply for grants under SUPREME.

Places in News

Mount Kilimanjaro

News: Recently, the Union Information and Broadcasting Minister congratulated Anjali Sharma of Kangra district of Himachal Pradesh for conquering Mount Kilimanjaro in Africa, wearing Luanchari.

About:

- Located in **Tanzania**, Mount Kilimanjaro is the African continent's highest peak at 5,895 meters (19,340 feet). The majestic mountain is a snow-capped volcano.
- It is world's largest free-standing mountain.
- It has three main volcanic peaks namely - **Kibo, Mawenzi, and Shira**.
- Amongst these three peaks, Kibo is the tallest of the three volcanic formations which is also a dormant volcano while the other two are extinct volcanoes.
- The mountain is also known for its snow-capped peak.
- The mountain has five main vegetation zones from the lowest to the highest point: Lower slopes, montane forest, heath and moorland, alpine desert and summit.
- The Kilimanjaro National park was named a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage site in 1987.



Eravikulam National Park

News: Eravikulam National Park (ENP), the natural habitat of Nilgiri tahr in Munnar, has a new attraction — a Fernarium set up inside the park.

What is a Fernarium?

- A fernarium is a type of **botanical garden or greenhouse** that specializes in cultivating and displaying various species of ferns.
- Ferns are part of the Epiphytic family. They grow naturally in a soilless condition. The plants obtain water and nutrients through leaching from trees.
- Ferns are a diverse group of plants that do not produce flowers or seeds but instead reproduce through spores.

About ENP:

- Initially a Wildlife Sanctuary in 1975 and it was later converted to a National Park (1978) with the intention of protecting the indigenous population of Nilgiri Tahr (highly endangered mountain goat).
- “Neelakurinji”, the flower that blooms once in twelve years grows here.
- The highest peak south of the Himalayas – the Anamudi is located here.



Netravali Wildlife Sanctuary

News: A black panther recently rescued from a village in Goa is healthy and it will be released into the Netravali Wildlife Sanctuary.

About:

- It is situated in the Sanguem Taluka in Eastern Goa.
- River Netravali or Neturli originates in this sanctuary which is an important tributary of the **Zuari River**.
- To the north of the Netravali wildlife sanctuary lie the **Bhagwan Mahavir Wildlife Sanctuary** and the **Cotigao Wildlife Sanctuary** lies to its South.
- It has two all-season waterfalls, namely Savri and Mainapi.
- Flora: The forest is a predominantly moist deciduous type with patches of semi-evergreen forest in the valleys.
- Fauna - Indian gaur, spotted deer, sambar deer, barking deer, wild boar, and black-faced langur. the Great Pied Hornbills, Black Panther, Slender Loris and the Giant Squirrel.



Nathu La

News: The place is in news due to Avalanche.

About:

- It is a mountain pass in the **Dongkya Range** of the Himalayas between China's Yadong County in Tibet, and the Indian states of Sikkim and West Bengal in Bengal, South Asia.
- The pass, at 4,310 m (14,140 ft), connects the towns of Kalimpong and Gangtok to the villages and towns of the lower Chumbi Valley.
- Nathu means 'listening ears', and La means 'pass'.
- It is an **open trading border post** between India and China.
- The other passes located in the state of Sikkim are **Jelep La Pass**, **Donkia Pass**, **Chiwabhanjang Pass**.



Dibang WS

News: The Dibang Wildlife Sanctuary in Arunachal Pradesh, India is set to become a tiger reserve, according to the National Tiger Conservation Authority (NTCA).

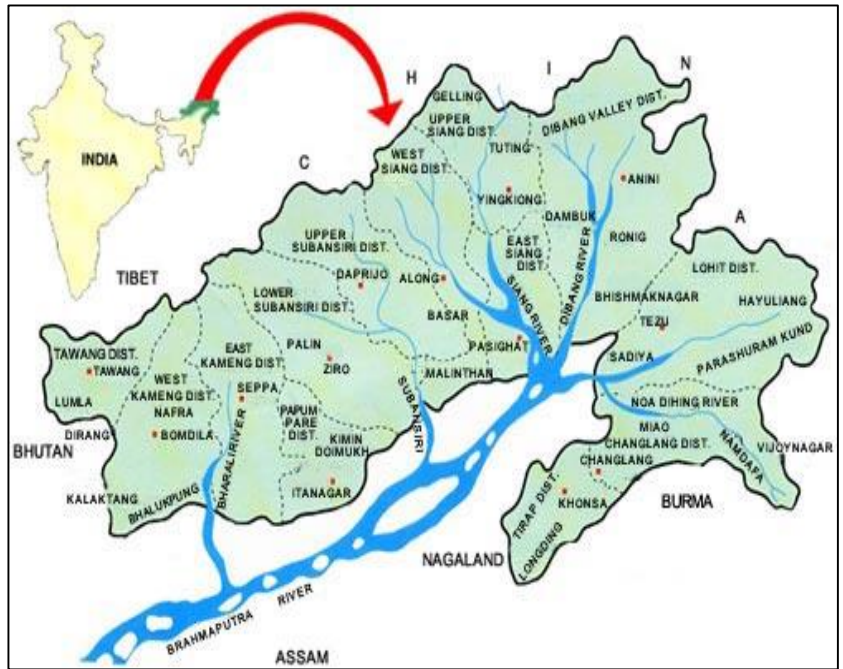
Background:

- However, this has caused concerns amongst Idu Mishmi tribes who believe that declaring Dibang as a TR will reduce their access to forest

About:

- It was derived its name from The Dibang River, a tributary of the Brahmaputra River

- It is located adjacent to the **Mouling National Park**, Dibang WLS was established in the 1980s. Later in 1988, as per the guidelines of UNESCO, together these areas became part of the **Dibang Biosphere Reserve**, one of the major bio-diversity hotspots of the world.
- Vegetation - Temperate broad-leaved forests, temperate conifer forests (Rhododendron, Bamboo, Gregaria, Tsuga, etc.), and alpine vegetation at higher altitudes
- Fauna - Mishmi takin, Asiatic black bear, tigers, Gongshan muntjac, Red panda, Red goral, and Musk deer.



Who are IDU Mishmis?

- They are a **sub-tribe** of the Mishmi group (the other two Mishmi groups are Digaru and Miju) in Arunachal Pradesh and have a strong connection to the region's flora and fauna.
- As per Idu mythology, tigers are their "elder brothers," and their belief system of myths and taboos protects many animals, including a prohibition on killing tigers.
- Idu Mishmis are an example of a 'cultural model of conservation' and they support wildlife protection.

Suhelwa WS

News: In the recently released report on the tiger census in the country, it is said that Suhelwa Wildlife Sanctuary is a new area where photographic evidence of tigers has been recorded for the first time.

About:

- Suhelwa wildlife sanctuary is located in Sravasti, Balrampur and Gonda districts of Uttar Pradesh.
- Suhelwa is connected with the forest of Mahadevpuri in Nepal.
- It is one of the important places in the Bhabar-Tarai Eco-System area which is rich in biodiversity.
- Other animals found here are deer, nilgai, wild boar and several varieties of migratory birds.

Kuttamperoor River

News: The river in Allapuzha, Kerala has been in news for River rejuvenation project.

Background:

- It was dead for more than a decade due to waste dumping, encroachments, and other human activities.
- It has been rejuvenated through deepening the channel, removing encroachments, constructing bunds on both sides. The revival of the Kuttamperoor river is expected to **help control floods** in the region.

What is River rejuvenation?

- River rejuvenation is the process of reviving or restoring the **natural flow** and **health of a river** that has been damaged due to human activities such as waste dumping, encroachment, and pollution.
- The process involves **removing pollutants, cleaning up riverbeds**, and **restoring** the natural environment around the river.

What are impacts of river rejuvenation and what initiatives have been taken earlier?

- **Promotes Biodiversity** by restoring natural habitat of animals and plants.
- **Boost tourism and livelihood opportunity** for people.
- It can help control floods as already mentioned above.

- In 2022, the Ministry of Environment, Forest and Climate Change released Rs. 19,000-crore Detailed Project Reports (DPRs) on rejuvenation of 13 major rivers through forestry interventions. These 13 rivers are Jhelum, Chenab, Ravi, Beas, Sutlej, Yamuna, Brahmaputra, Narmada, Godavari, Mahanadi, Krishna, Cauvery, and Luni.

What are other examples? (Please locate river names on your map)

- The **Rhine River** in **Europe** was once highly polluted but has since undergone a massive clean-up effort that has transformed it into a vibrant and thriving ecosystem.
- **River Thames** - England
- **Singapore River** cleanup
- **Ganga Action Plan** - In India, the Ganga Action Plan is an ongoing project aimed at cleaning up and rejuvenating the highly polluted Ganga River.

Natron Lake

News: The lake was recently covered in a news feed on WION channel.

About:

- Lake Natron is an **alkaline lake** located in the north Ngorongoro District of the Arusha Region in **Tanzania**.
- It has been reported that the lake turns animals that touch it into "stone".
- The lake contains **salt, soda, and magnesite deposits**. **Ol Doinyo Lengai**, also known as the Mountain of God, contributes to the lake's hostile conditions. It is the only active volcano to emit natrocarbonatites - a rare carbonatite lava.
- The lake, deemed one of the world's deadliest, must be terrifying for most animals, but not for flamingoes. This lake is a thriving place and the only regular breeding area in East Africa for the 2.5 million lesser flamingoes.



Sea of Japan

News: Russia's Pacific Fleet recently conducted naval defence drills in the Sea of Japan.

About:

- Sea of Japan (East Sea) is a marginal sea of the western Pacific Ocean.
- It is located in Eastern Asia that is bounded by Japan and Sakhalin Island to the east and by Russia and Korea on the Asian mainland to the west.
- The sea itself lies in a deep basin, separated from the East China Sea to the south by the Tsushima and Korea straits and from the Sea of Okhotsk to the north by the La Perouse (or Sōya) and Tatar straits.
- To the east it is also connected with the Inland Sea of Japan by the Kanmon Strait and to the Pacific by the Tsugaru Strait.
- It influences the climate of Japan because of its relatively warm waters.



- There are no large islands in the Sea of Japan. Except for the South Korean island of Ulleungdo, all the other small islands are situated near the eastern coast of the sea.

Sudan

News: A week into the uncertain security situation in Sudan, Prime Minister Narendra Modi Friday directed officials to prepare contingency evacuation plans for about 3,000 Indian citizens stuck in the conflict-ridden country.

About:

- Sudan is a country in North-east Africa.
- It is bordered with the Central African Republic to the southwest, Chad to the west, Egypt to the north, Eritrea to the northeast, Ethiopia to the southeast, Libya to the northwest, South Sudan to the south and the Red Sea.
- Capital – Khartoum
- Largest city – Omdurman

Other important points:

- The terrain is generally flat plains, broken by several mountain ranges. In the west, the **Deriba Caldera** (3,042 m or 9,980 ft), located in the **Marrah Mountains**, is the highest point in Sudan. In the east are the Red Sea Hills.
- The **Blue Nile** and **White Nile** rivers meet in Khartoum to form the Nile, which flows northwards through Egypt to the Mediterranean Sea.
- The Blue Nile's course through Sudan is nearly 800 km (497 mi) long and is joined by the Dinder and Rahad Rivers between Sennar and Khartoum. The White Nile within Sudan has no significant tributaries.

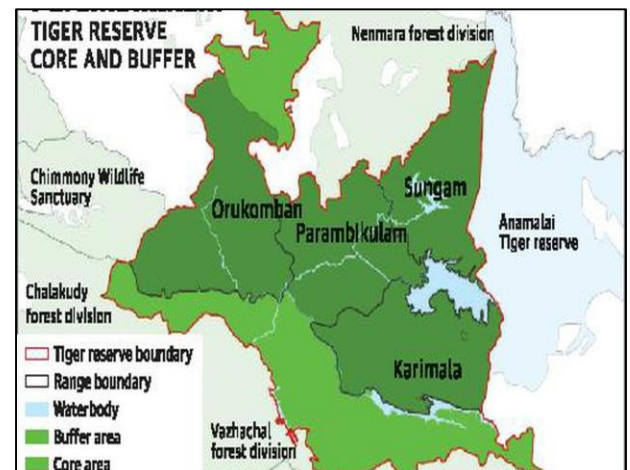


Parambikulam Tiger Reserve

News: The Supreme Court recently dismissed the Kerala government's appeal against the order of the Kerala HC directing the relocation of Arikomban (Wild Elephant), the "rice tusk" of Munnar, to the Parambikulam tiger reserve.

About:

- Parambikulam is one of the premier Tiger Reserves of India and is endowed by nature in terms of species, habitat and ecosystem diversity.
- It is located in the **Palakkad District of Kerala** and lies in between the **Anamalai hills** and **Nelliampathy hills** of the Southern Western Ghats.
- The Reserve supports diverse habitat types viz., evergreen forests, moist and dry deciduous forests and grasslands.
- Other unique habitats like **montane grasslands** and **marshy grasslands** (locally known as 'vayals') are extensively found.
- **Fauna** - Asian elephant, Gaur, Spotted deer, Sambar, Nilgiri Tahr, Barking deer (Muntjac), Lion Tailed Macaques.



Talley Valley Wildlife Sanctuary

News: Recently, researchers from Titli Trust, National Centre for Biological Sciences and others have discovered a new moth from Talley Valley Wildlife Sanctuary in **Arunachal Pradesh**.

About:

- Talley Valley is a wildlife sanctuary as well as a bio-diversity hotspot located at a distance of 32 kms from Ziro towards the north east. Comprising sub-tropical and alpine forests it has a variety of flora and fauna, many of which are endangered. The place offers great trekking opportunities.
- Talley Valley Reserved Forest and Talle Wildlife sanctuary is situated at an elevated level with rivers like Pange, Sipu, Karing and Subansiri flowing through the Reserved Forest and Sanctuary.
- It is home to highly endangered species like clouded leopard. **Pleioblastus simone** is a bamboo variety only found in Talley Valley.

About Moth Species discovered:

- *Piarosoma arunachalensis*, moth species belonging to the genus *Piarosoma*.
- The moth is a Burnet moth and is largely day-flying.
- It belongs to the family *Zygaenidae*, which includes Forester and Burnet moths.
- Burnet and Forester's moths are brightly coloured day-flying moths, often with clubbed antennae.

Pulicat Lake

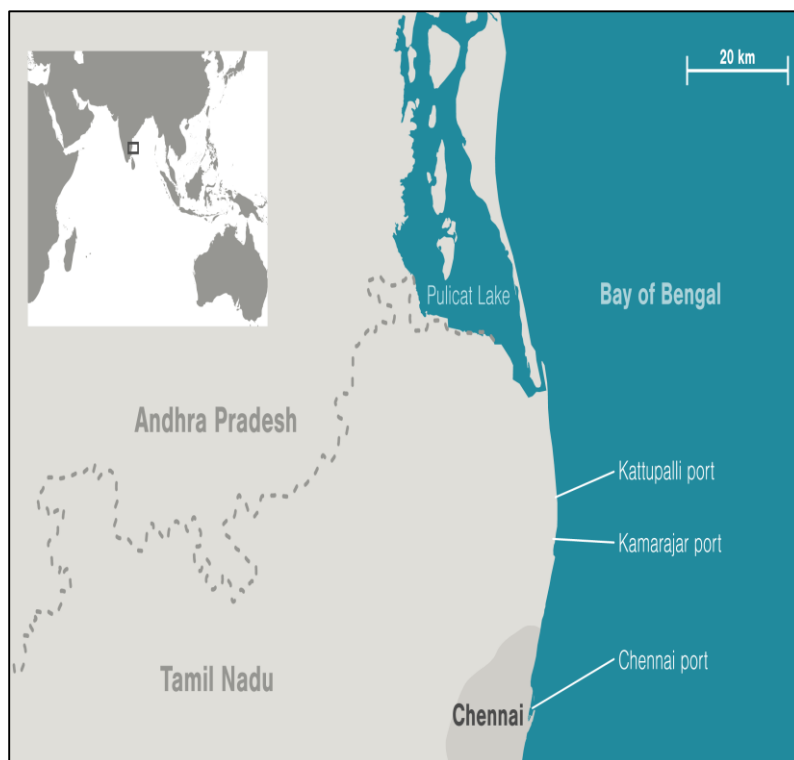
News: Nearly after a six-year absence, the lesser flamingos have found their way back to Pulicat Lake.

About:

- It is the **second-largest brackish water lake** in the country.
- It lies at the border of the states of **Andhra Pradesh** and **Tamil Nadu**. (Majorly lies in Andhra Pradesh)
- The long and narrow Sriharikota Island, which separates Pulicat Lake from the Bay of Bengal,
- It is popular as a flamingo-watching site and for water activities.
- Both the South West and North-East monsoons provide rain to the area where Pulicat Lake is located.

About Lesser Flamingos:

- It is the smallest of all flamingos but has the largest population.
- IUCN Status – **Near Threatened**



North Sea Summit

News: Recently, Nine European countries have convened for a summit aimed at boosting the deployment of offshore wind turbines in the North Sea to make it the largest green energy centre in Europe.

About North Sea summit:

- Location – Ostend, Belgium

- Participant countries - Belgium, Denmark, France, Germany, Ireland, Luxembourg, Netherlands Norway, and the United Kingdom
- Objective - To make the North Sea the largest green energy centre in Europe by accelerating the deployment of offshore wind turbines.
- The summit sets ambitious targets including the production of at least **120 gigawatts (GW) of offshore wind energy** in the North Sea by 2030
- The first summit in 2022 had **Esbjerg Declaration** which was held in Denmark.

About North Sea:

- It is the northeastern arm of the Atlantic Ocean located between the British Isles and the mainland of northwestern Europe.
- It is bordered by
 - The island of Great Britain to the southwest and west.
 - The Orkney and Shetland Islands are to the northwest.
 - Norway to the northeast, Denmark to the east.
 - Germany and the Netherlands to the southeast.
 - Belgium and France to the south.
- It is connected to the Atlantic by the **Strait of Dover** and the **English Channel** and opens directly onto the ocean between the Orkney and Shetland Islands and between the Shetland Islands and Norway.



Kalesar National Park

News: Recently, a tiger was recently spotted at Kalesar National Park in Haryana's Yamunanagar district.

About:

- Location - Yamunanagar, Haryana along the foothills of Shivalik ranges.
- **River Yamuna** lies to its east and **Rajaji National Park** (Uttarakhand), lies to the northeast of the park.
- **Simbalbara National Park** nestled in Shivalik Hills lies to the north, sharing a border with Himachal Pradesh and **Morni Hills** lies to the west.
- The park was named after a temple (known as Kalesar Mahadev temple) located inside the premise of the park.

Thirunelly Temple

News: The **Indian National Trust for Art and Cultural Heritage** (INTACH) has urged the government to conserve historically significant structures, including the 600-year-old 'Vilakkumadom' at the **Sree Mahavishnu Temple** in Thirunelly, during its renovation.

About:

- It is located on the sides of **Brahmagiri Hill**, a part of the Sahyadri Mountain Ranges in the **Wayanad district of Kerala**.
- It is also known as the Sahyamala Kshetram and Kashi of the South.

- It is the only temple in the world where the devotees can perform all the rituals related to one's life, starting from birth to death and life after death.
- The rituals in this temple are performed on the banks of stream **Papanashini**, which originates from the Brahmagiri hills.



Architecture:

- The temple embodies classical, traditional Kerala architecture.
- The shrine is shielded with 30 granite columns, and the ground is paved with huge square pieces of granite.
- The inner sanctum is surrounded by a tile-roofed structure, and there is an open courtyard around the Sanctorum.
- Along the outer wall of the temple is a cloister made of granite pillars cut in cubical style.
- The main deity idol of the temple is in the form of **Chathurbhuja - Lord Vishnu** with his four hands

About INTACH:

- It is an **autonomous non-governmental Indian non-profit society** that seeks to preserve Indian culture and heritage.
- It was founded in 1984 with the vision to spearhead heritage awareness and conservation in India.
- Headquarters: New Delhi

Hemis and Thiksay Monastery

News: As part of G20 meetings, more than 100 delegates from 30 countries visited the Hemis and Thiksey monasteries.

About Hemis Monastery:

- The Hemis Monastery is a Buddhist monastery located 45 kilometers from Leh city, Ladakh, India.
- It belongs to the **Red Hat Sect or Drukpa lineage** of Buddhism. It is also famous for its 2-day religious ceremony known as the Hemis Festival.
- The Hemis Monastery has an important library of Tibetan books and a very impressive and valuable collection of Thangkas, gold statues and Stupas embedded with precious stones

About Thiksey Monastery:

- Located at an altitude of 11,800 ft (3,600 m), the Thiksey monastery is a twelve-story building. It has many elements of Buddhist art such as thangkas, stupas, wall paintings, statues, and swords.
- The **Maitreya Temple** is one of the most popular attractions in the monastery.
- The monastery is affiliated with the **Gelugpa sect or Yellow Hat sect** of Tibetan Buddhism.
- It is notable for its resemblance to the Potala palace in Lhasa, Tibet and its annual Gustor Festival