



SHAPING TALENT

# CURRENT AFFAIRS NOVEMBER 2022

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## Economic & Social Development

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### 1. UNDP Assistance for Workers in Waste Segregation Industry:

- The United Nations Development Programme (UNDP) is helping the Indian workers working in the waste segregation industry to move into the formal economy, by helping them to take benefits of government welfare programmes.
- As part of the initiative, the United Nations Under-Secretary-General distributed the 'Jan Dhan' account kits to waste segregation workers.
- The opening of the 'Jan Dhan' accounts have been eased through the UNDP's plastic waste management programme.
- The initiatives also ensure the well-being and financial inclusion of the 'Safai Sathis' or waste-pickers, by linking them to social protection schemes like the 'Jan Dhan' accounts, Aadhar cards, 'Ayushman Bharat', pension schemes, and scholarships for children, among others.
- A baseline survey done by the UNDP shows that;
  - ✓ Nearly 70% of them come from socially- backward groups and over 60% have no formal education.
  - ✓ More than 90% of workers reported owning an Aadhar card but only a few have an income, caste, or occupation certificate.
  - ✓ Less than 5% had any health insurance, indicating very high degrees of health-shock vulnerabilities".
  - ✓ 'Of Safai Sathis' who had a bank account, only 20% were linked to the 'Jan Dhan Yojana.

### Social Security Scheme Workers:

- The Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY) provide Life and Disability cover.
- Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) is available to people in the age group of 18 to 50 years. Risk coverage under this scheme is for Rs. 2.00 lakh in case of the death of the insured, due to any reason, at an annual premium of Rs. 436.
- Pradhan Mantri Suraksha Bima Yojana (PMSBY) is available to people in the age group of 18 to 70 years. The risk coverage under the scheme is for Rs 2.00 lakh in case of accidental death or total permanent disability and Rs. 1.00 lakh for partial permanent disability; due to accident at a premium of Rs. 20 per annum.
- Annual healths cover Rs. 5 lakhs per eligible family for secondary and tertiary care hospitalization under the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY).
- It is a completely cashless and paperless scheme.
- The beneficiary families have been identified from the Social Economic Caste Census (SECC) of 2011.
- Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM) pension scheme provides old age protection.
- It provides a monthly pension of Rs. 3000/- after attaining the age of 60 years.
- The workers in the age group of 18-40 years whose monthly income is Rs. 15000/- or less and who is not a member of EPFO/ESIC/NPS (Govt. funded) can join the Scheme.
- Atal Pension Yojana.
- PM MUDRA Yojna to provide financial assistance.

- Direct Benefit Scheme to help needy people, remove middlemen and encourage Social Security
- Public Distribution System under National Food Security Act.
- Mahatma Gandhi National Rural Employment Guarantee Act.
- Pradhan Mantri Kaushal Vikas Yojana
- The e-Shram portal was launched to create a National Database of unorganized workers and to facilitate the delivery of Social Security Schemes/Welfare Schemes to the unorganized workers.

#### **UNDP:**

- The United Nations Development Programme (UNDP) provides expert advice, and training grants support to developing countries, with an increasing emphasis on assistance to the least developed countries. It promotes technical and investment cooperation among nations.
- The UNDP Executive Board is made up of representatives from 36 countries around the world who serve on a rotating basis.
- It is funded entirely by voluntary contributions from member nations.
- UNDP is central to the United Nations Sustainable Development Group (UNSDG), a network that spans almost 170 countries and unites the 40 UN funds, programmes, specialized agencies and other bodies working to advance the 2030 Agenda for Sustainable Development.
- The UNDP is considered an executive board within the UN General Assembly (UNGA).
- It is headed by an Administrator.

#### **Waste management:**

- With a burgeoning population and even faster urbanisation, there has been an explosion in the generation of municipal solid waste (MSW) in Indian cities.
- This has severely damaged the environment and public health, and strained the capacity of urban local bodies to collect, transport, treat and scientifically dispose of solid wastes.
- Urban India alone generates nearly 0.15 million tonnes per day of MSW, with per capita generation ranging between 0.30 kg per day to 0.45 kg per day.
- The volume of waste is projected to reach 165 million tonnes by 2031 and 436 million tonnes by 2050, if existing policies, programmes and management strategies are not adequately addressed.
- It is important to note that the engagement of formal waste management systems remains low in the cities, primarily due to insufficient funds, low sectoral development and lack of know-how about sustainable waste management businesses.
- Hence, in many developing countries, including India, waste collection and material recycling activities are majorly performed by the informal waste sector

#### **Role of Informal Sector:**

- The informal sector may refer to individuals, families, and private sector enterprises working in solid waste management services, whose activities are not organized, sponsored, financed, contracted, recognized, managed, taxed or reported upon by governmental authorities.
- Informal stakeholders are waste-pickers in dumpsites and at communal waste collection points, informal waste collectors, itinerant waste buyers, small junkshop dealers and big waste godown owners.

- According to the Solid Waste Management Rules (SWM), 2016: “informal waste collectors” include individuals, associations or waste traders who are involved in the sorting, selling and purchasing of recyclable materials.
- The informal sector is often not officially approved, recognized and acknowledged, besides the fact that they potentially contribute to waste recycling practices of cities by collecting, sorting, processing, storing and trading waste materials in the recycling value chain.
- ‘Role and size of the informal sector in waste management – a review’, a paper published in Waste and Resource Management in 2013, estimates that the informal waste economy employs about 0.5-2 per cent of the urban population worldwide. Assuming an urbanization rate of 50 per cent, the world’s urban population can be calculated at 2.8 billion people.
- The informal recycling sector reduces the cost incurred in the treatment and disposal of solid waste by extracting recyclables before the mixed waste is subjected to any specific treatment or haphazardly dumped into landfills.
- The informal sector is the backbone of the recycling industry in the country, contributing a lot in terms of environmental sustainability and circular economy. It also enormously contributes to reducing the economic burden of urban local bodies.

**Concerns:**

- The informal sector lives close to dumpsites and works under unhygienic and unhealthy conditions.
- Often, the workers have no access to drinking water or public toilets.
- They do not have appropriate personal protective equipment (PPE) such as gloves, gumboots and aprons.
- Due to the poor living and working conditions, malnutrition, anaemia and tuberculosis are common among them.
- Waste pickers are potentially exposed to a wide range of occupational hazards. Community waste bins and dumpsites act as breeding grounds for various bacterial and viral diseases.
- As a result, waste-pickers often face gastrointestinal ailments.
- Infections are also caused by their contact with human and animal excreta, bodily fluids and dead animals. They also get cut by sharp objects, ragged metal edges and broken glass in the mixed waste.
- Despite their crucial role, informal waste workers continue to be subjected to systemic marginalization, economically as well as socially.
- They are treated as dirty and unwanted elements of society, and they have to deal with exploitative social behaviour.
- Further, child labour is quite prevalent and life expectancy is low. In addition, waste-pickers are not covered under any labour legislation. As a result, they do not benefit from social security and medical insurance schemes. There is a dire need to initiate policy action for their social and economic upliftment.

**Way Forward:**

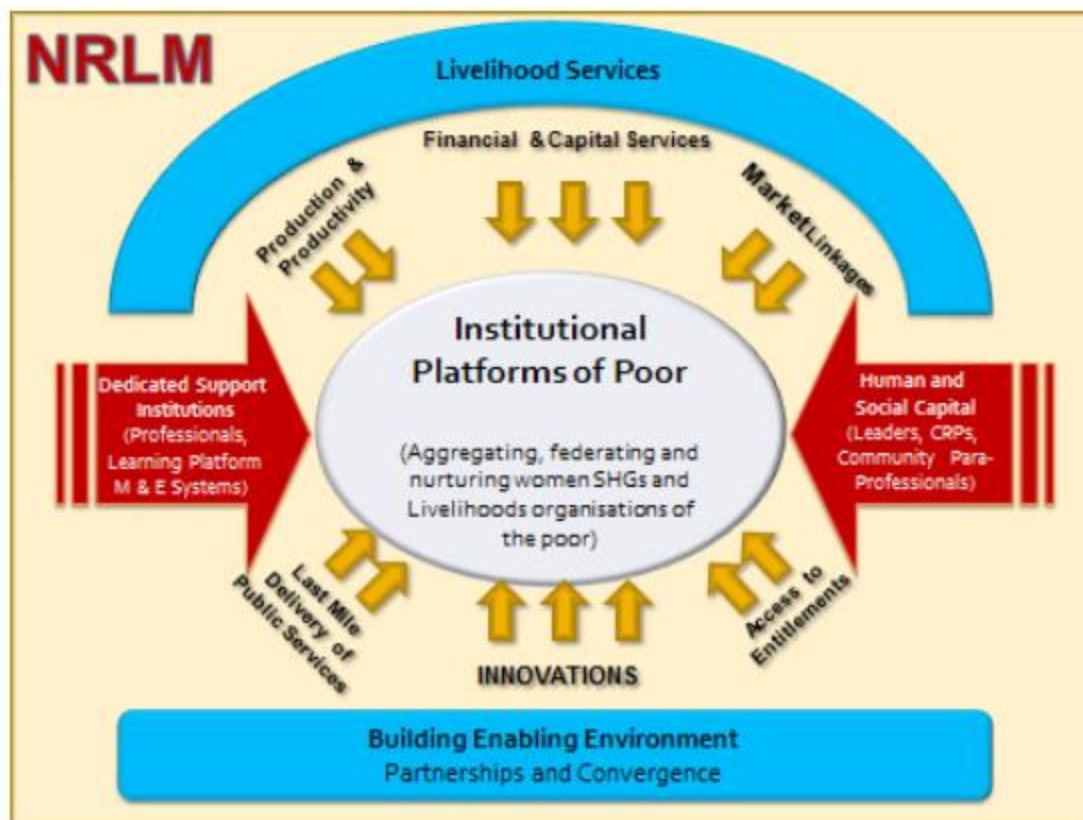
- There is a lack of clear and comprehensive laws and policies to protect the rights of waste pickers in India. There is an urgent need to frame and implement a uniform waste-picker welfare law that recognizes and integrates them into the waste management chain.

- The law must include basic provisions related to mandatory identity cards; access to waste for collection, segregation, and sorting; PPE to minimize occupational hazards; right to necessities like water, sanitation and facilities for clean living; and health insurance.
- The role of waste-pickers could be formalized by permitting them to use the designated collection and compaction stations (transfer stations, material recovery facilities) in a city for the segregation of recyclables.
- There is a need to identify, organize, train, and empower the waste-pickers. This can be done by designing an inclusive waste management model to integrate the waste-pickers. For example, involving them in the primary door-to-door collection of waste, or engaging them in material recovery facilities.
- There should be a provision of enough space for sorting, recycling, and trade of recyclables.

## 2. Nai Chetna Campaign:

- Recently, the Ministry of Urban Development launches the “Nai Chetna-Pahal Badlav Ki” - A Community-led National Campaign Against Gender-Based Discrimination.
- Kerala also launched the campaign under the umbrella of the Kudumbashree Mission.
- In Details:
- It is a four-week campaign, aiming at equipping women to recognise and prevent violence and making them aware of their rights.
- Activities will be centred on the theme of ‘Gender equality and gender-based violence.’
- This will be an annual campaign focussing on specific gender issues each year. The focus area of the campaign this year is gender-based violence.
- This campaign will be implemented by all states in collaboration with Civil Society Organisations (CSO) partners, and actively executed by all levels including the states, districts and blocks, engaging the community institutions along with the extended community.
- The campaign will bring together all line departments and stakeholders to create a concerted effort in acknowledging, identifying and addressing the issues of violence.

### **What is the National Rural Livelihoods Mission?**



#### About:

- It is known as “Deendayal Antyodaya Yojana-National Rural Livelihood Mission (DAY-NRLM)”.
- It is a centrally sponsored programme, launched by the Ministry of Rural Development in June 2011.
- The government accepted the recommendation of the Prof. Radhakrishna Committee and restructured “The Swarnjayanti Gram Swarozgar Yojana (SGSY)” into “National Rural Livelihoods Mission (NRLM)” in FY 2010-11.

#### Aim:

- To reduce poverty by enabling the poor households to access gainful self-employment and skilled wage employment opportunities, resulting in appreciable improvement in their livelihoods on a sustainable basis, through building strong grassroots institutions for the poor.

#### Sub-Schemes:

##### MKSP:

- In order to promote agro-ecological practices that increase women farmers’ income and reduce their input costs and risks, the Mission has been implementing the Mahila Kisan Shashaktikaran Pariyojana (MKSP).

##### SVEP and AGEY:

- As part of its non-farm livelihoods strategy, DAY-NRLM is implementing Start-Up Village Entrepreneurship Programme (SVEP) and Aajeevika Grameen Express Yojana (AGEY).
- SVEP aims to support entrepreneurs in rural areas to set up local enterprises.



- AGEY, launched in August 2017, to provide safe, affordable and community monitored rural transport services to connect remote rural villages.

#### **DDUGKY:**

- Deendayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY) aims at building placement-linked skills of the rural youth and placing them in relatively higher-wage employment sectors of the economy.

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#### **RSETIs:**

- The Mission, in partnership with 31 Banks and State Governments, is supporting Rural Self Employment Institutes (RSETIs) for skilling rural youth to take up gainful self-employment.

#### **What are the Major Causes of Gender Based Violence?**

##### Social/Political/Cultural factors:

- ✓ Discriminatory social, cultural or religious laws, norms and practices that marginalize women and girls and fail to respect their rights.
- ✓ Gender stereotypes are often used to justify violence against women. Cultural norms often dictate that men are aggressive, controlling, and dominant, while women are docile, subservient, and rely on men as providers. These norms can foster a culture of outright abuse.
- ✓ Collapse of family, social and communal structures and disrupted roles within the family often expose women and girls to risk and limit coping mechanisms and avenues for protection and redress.

##### **Judicial Barriers:**

1. Lack of access to justice institutions and mechanisms, resulting in a culture of impunity for violence and abuse.
2. Lack of adequate and affordable legal advice and representation.
3. Lack of adequate victim/survivor and witness protection mechanisms.
4. Inadequate legal framework, including national, traditional, customary and religious law, that discriminates against women and girls.

##### **Individual Barriers:**

- Threat or fear of stigma, isolation and social exclusion and exposure to further violence at the hands of the perpetrator, the community or the authorities, including arrest, detention, ill-treatment and punishment.
- Lack of information about human rights and on how and where to seek remedies.

#### **What are the Impacts of Violence Against Women?**

1. It seriously affects all aspects of women's health- physical, sexual and reproductive, mental and behavioural health, thus preventing them from realizing their full potential.
2. Violence and threat of violence affects women's ability to participate actively, and as equals, in many forms of social and political relationships
3. Workplace harassment and domestic violence has an impact on women's participation in the workforce and their economic empowerment.
4. Sexual harassment limits the educational opportunities and achievements of girls.

#### **What can be done to Eliminate Gender Based Violence?**

- Gender Based Violence (GBV) can be eliminated through collective efforts of society, government and individuals.
- Training healthcare providers to recognize and respond to gender-based violence is one of the most important ways of identifying and assisting victims.

- The media is a key conduit for making GBV visible, advertising solutions, informing policy-makers and educating the public about legal rights and how to recognize and address GBV.
- School systems are instrumental to stopping GBV before it starts. Regular curricula, sexuality education, school counseling programs and school health services can all convey the message that violence is wrong and can be prevented.
- A number of studies have shown that involving entire communities in recognizing, addressing and working to prevent GBV is one of the surest ways of eliminating it.

### 3. UNGA Resolution on International Tax Cooperation Framework:

- Recently, the United Nations General Assembly has unanimously adopted a resolution to develop an international tax cooperation framework or instrument based on a UN intergovernmental process. Nigeria submitted this resolution on behalf of a consortium of 54 African countries.

#### **Significance:**

- The proposed UN framework on global tax cooperation will put an end to the Organisation for Economic Co-operation & Development's 60-year role as the regulator of taxations across the world. Similar framework has been proposed by the OECD. It has been under development in the OECD for nearly a decade but its final draft is yet to be given. The proposed UN framework will likely put an end to the power struggle between the UN and the OECD on international tax regulations.
- The proposed framework is expected to benefit developing countries in Africa and Asia since they are provided with a larger say on the formulation of global tax regulations.
- Besides covering tax issues related to digital economy, it is also expected to focus on the problem of illegal money flows and provide solutions for the same. It will have a major impact on global and local economies, businesses and people across the world.

#### **Two Pillar Solution:**

- The "Two Pillar Solution", which was spearheaded by the OECD, aims to address the tax challenges that are occurring within the digital economy. Pillar One deals with the biggest and most profitable multinational enterprises and reallocates a part of their profit to countries where they sell their products and services. According to Pillar Two, any company with an annual revenue of over €750 million will be subject to a global minimum corporate tax.
- With the Two-Pillar Solution all economies, including developed, developing and emerging economies, will receive additional tax revenues. Pillar One is expected to divert more than 125 billion USD in tax to market jurisdiction each year. Pillar Two is expected to generate some 150 billion in addition global tax revenue each year.
- Despite the Two-Pillar Solution's benefits, the mechanism of allocation of profits has remained an area of contention among several developing countries. The new UN-led tax regime is expected to address these challenges.

### 4. World Intellectual Property Indicators 2022:

- The World Intellectual Property Organisation (WIPO) recently released the World Intellectual Property Indicators 2022.
- The World Intellectual Property Indicators (WIPI) is an authoritative report that provides an overview of activities in areas of patents, utility models, trademarks,

industrial designs, microorganisms, plant variety protection, geographical indications and creative economy. It is released every year by WIPO. The WIPI 2022 compiled the data from around 150 national and regional intellectual property offices across the globe.

### **What are the key findings of the World Intellectual Property Indicators 2022?**

- In 2021, around 3.4 million patent applications were filed across the world. This is a 3.6 per cent increase from the previous year.
- The top two countries with highest number of patent filings are India and China.
- Local patenting activities in the US, Japan and Germany have declined in 2021.
- The European Patent Office (EPO) and South Africa made significant contributions to the overall growth of patents.
- India received 61,573 patent applications last year, an increase from 56,771 in 2020.
- Almost 43 per cent of the Indian patent applications are local and filed by resident applicants. Some 18.5 per cent of total published applications in the country are related to pharmaceuticals.
- According to this report, 57.3 per cent of the patent applications filed in India were by non-residents. The share of non-resident applications is very high in countries like Australia (90.8%), Canada (87.3%), the EPO (55.6%), the United States (55.7%), Brazil (80.7%), Indonesia (84.1%), Mexico (93.1%) and Singapore (86.1%).
- India recorded a 16.5 per cent growth in patent grants in 2021. However, the percentage of the pending patent applications has increased to 91.5 percent during the same period.
- India also witnessed a 6.7 per cent increase in the filing of the number of trademark applications. About 42.4 per cent of non-resident trademark filing in Indian offices were from the US, China and Germany.
- China, the US, the EU, India and the UK accounted for some 65 per cent of the worldwide trademark filings.

### **5. The Collapse of FTX Cryptocurrency Exchanges:**

- A sharp decline in the prices of Bitcoin, the collapse of the Terra Luna network and new crypto-tax regulations in India have compounded miseries for investors and the overall industry.
- However, the sudden market meltdowns turned more intense after the shocking FTX crash.

#### **In Details:**

- FTX was one of the largest and fastest-growing crypto exchanges in the world, largely tapping into the crypto derivatives market.
- Before the collapse, it was the second-largest cryptocurrency exchange globally and, along with Binance, accounted for a majority of global cryptocurrency trades.
- This event dragged Bitcoin's price to a two-year low.

#### **What's the platform used for?**

#### **FTX is set up as two verticals:**

- One can be accessed by global users, and the other is specifically built in compliance with U.S. law.
- FTX.US, catered to U.S. residents as they could not legally trade on the FTX International platform.
- FTX claimed to have over one million customers in 2021.

- FTX International offered investors an option to trade in tokenized stocks, which are digital coin-based derivatives of shares of actual companies.
- It also allowed users to bet on expected valuations of pre-IPO companies. Such features attracted users to the platforms.

#### **Major challenges:**

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- The latest crypto crash affected not just FTX users, but also traders investing in top cryptocurrencies like Bitcoin and Ether.
- Investors holding large reserves of the exchange's own FTT token took a hard hit as it lost most of its value in just hours.
- About 130 affiliated firms are now part of the bankruptcy proceedings.

#### **How different is this from the Luna, Celsius, and Voyager collapses?**

- Terra [LUNA] is a cryptocurrency project (not a platform) which collapsed in May this year.
- Formerly one of the top cryptocurrencies by market capitalization, its LUNA cryptocurrency and Terra USD [UST] stable coin lost over 90% of their value.
- This caused liquidity shortages that prompted lending platforms like Celsius and Voyager to suspend withdrawals, which hastened their own collapse and legal woes.
- FTX is a crypto exchange rather than a lending platform.

#### **Way Forward:**

- The volatile crypto market from here could face more regulation, according to some experts.
- Crypto companies are deeply intertwined: they invest in one another, buy one another's tokens and lend tokens and capital to one another which means the collapse of FTX could continue to topple others.
- This fallout makes a strong case for why we need decentralised systems like Defi. We will see an increase in transparency and widespread adoption of a decentralised system.
- This crash will force Web3 firms to build better solutions and develop effective rules for evaluating systematic risk.
- The incident has brought up the need for regulations in the sector: The step taken by Binance to launch an industry recovery fund to help projects during a liquidity crunch is a positive step in that direction.

#### **6. Karmayogi Prarambh Module:**

- The Karmayogi Prarambh module is an initiative under Mission Karmayogi - a National Programme for Civil Services Capacity Building (NPCSCB).
- The module is an online orientation course for all new appointees in various government departments.
- It will include a code of conduct for government servants, workplace ethics and integrity, human resource policies and other benefits and allowances that will help them to get acclimatized to the policies and transition smoothly into the new roles.
- The motive of the program is to keep the essence of civil service within the people of the country which is the center of all change.

#### **7. Framework to Protect Consumers from Fake, Deceptive Reviews in E-Commerce:**

- The Department of Consumer Affairs has recently announced new regulations to protect consumers from 'fake and deceptive reviews'.
- It is a part of the Bureau of Indian Standards norms that will be implemented from November 25.
- Major Guidelines

**Page|13 Voluntary Action:**

- E-commerce platforms will need to voluntarily disclose paid customer reviews of products and services.
- The e-commerce Company or restaurant will have to develop a code of practice, necessary terms and conditions for accessibility, and ensure that the content does not contain financial information.
- Identity:
- Reviews should not be misleading, and the identities of the reviewers should not be disclosed without their permission.

**Purchased review:**

- If a review is purchased or you are rewarding the person for writing the review, then that has to be clearly marked as a purchased review.

**Application:**

- The standard, IS 19000:2022, will apply to all organisations that publish consumer reviews online. These will include suppliers of products and services which collect reviews from their customers, third parties contracted by suppliers or independent third parties.
- The BIS has defined reviews as solicited and unsolicited:
- The person responsible for handling the review in any organisation will be called the review administrator.
- Solicited review refers to consumer reviews requested by the supplier or review administrator.

**Time period:**

- If a product gets a 4-5 stars rating, the organization will have to inform the period in which the data was collected, and if an average was calculated.

**Need of such a regulation:**

- Reviews posted online play a significant role in making purchase decisions and consumers exceedingly rely on reviews posted on e-commerce platforms to see the opinion and experience of users who have already purchased the good or service.

**Significance of the move:**

- Increased transparency: The new guidelines for online reviews are designed to drive increased transparency for both consumers and brands and promote information accuracy.
- Protection of consumers: Regulations are aimed at protecting consumers from fake and deceptive reviews.
- Building Trust: Given that e-commerce involves a virtual shopping experience without any opportunity to physically view or examine the product, it is essential that reviews are genuine, authentic and trustworthy.
- Penalty: If they indulge in unfair trade practices, then under the provisions of the Consumer Protection Act, the Central Consumer Protection Authority (CCPA) or a

consumer court can take penal action. CCPA usually treats such cases as a 'class' and the consumer commission as individual cases.

**Way forward:**

- The government will first set up a mechanism for voluntary compliance, and will make it mandatory if the menace continues to grow.
- Some countries are making rules, and some are making legal provisions, but India is the first country to make a standard.

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**Bureau of Indian Standards:**

- It is the National Standard Body of India. The Bureau of Indian Standards Act, 2016, has been implemented since 2017.
- It is responsible for the harmonious development of the activities of standardization, marking and quality certification of goods and for matters connected therewith or incidental thereto.
- BIS has its Headquarters at New Delhi. It has 5 Regional Offices (ROs) located at Kolkata (Eastern), Chennai (Southern), Mumbai (Western), Chandigarh (Northern) and Delhi (Central).
- The standards and certification scheme of BIS apart from benefitting the consumers and industry also support various public policies especially in areas of product safety, consumer protection, food safety, environment protection, building and construction, etc.
- It has worked towards specifically addressing various national priorities and other government initiatives like Swachh Bharat Abhiyan, Digital India, Make in India and ease of doing business through its activities of standardization and certification.
- The activities of BIS can be broadly grouped under the following heads:
  - ✓ Standards formulation
  - ✓ International activities
  - ✓ Product Certification
  - ✓ Hallmarking
  - ✓ Laboratory services
  - ✓ Training services - National Institute of Training for Standardisation
  - ✓ Consumer Affairs and Publicity

**8. National Centre of Excellence for Green Port & Shipping:**

- Recently, India's first National Centre of Excellence for Green Port & Shipping (NCoEGPS) was launched at "INMARCO 2022" held in Mumbai.
- The INMARCO is a quadrennial International Maritime Conference and Exhibition, hosted by the Institute of Marine Engineers (India).
- NCoEGPS is a major initiative by the Ministry of Ports, Shipping and Waterways (MOPSW) towards providing greener solutions.
- The NCoEGPS will be working under the framework of the Sagarmala programme of the MoPSW.
- The Energy and Resources Institute (TERI) is the knowledge and implementation partner for this project.

**Aim:**

- The centre aims to develop a regulatory framework and alternate technology adoption road map for Green Shipping to foster carbon neutrality and circular economy (CE) in shipping sector in India.
- Green Shipping refers to the use of resources and energy to transport people and goods by ship and specifically concerns the reduction in such resources and energy in order to preserve the global environment from Green House Gases (GHGs) and environmental pollutants generated by ships.
- India intends to increase the share of renewable energy to 60% of the total power demand of each of its major ports from a present share of less than 10%.
- This will be through solar and wind-generated power.

**Objectives:**

- a. To empower 'Make in India' in Port, Coastal and Inland water transport, and Engineering by developing state of art technologies and application products.
- b. To enable fast-track innovations in order to provide most appropriate solutions to various challenges in these sectors.
- c. To create a pool of competent manpower to the industry equipped with state of the art theoretical and practical knowhow.
- d. Self-sufficiency in providing short term solutions through scientific studies technology development technical arm in identifying and analysing complex problems and solving issues.

**Significance:**

- ✓ It is a major attempt towards realising Mission Lifestyle for the Environment (LiFE) movement as it aims to transform ports and shipping turn more Environment friendly.
- ✓ The Center will interact with all the ports, shipping, maritime states in understanding their problems and offering solutions through well proven and upstream scientific approaches.

**Related Initiatives:**

- ✓ The ports have also aimed to reduce Carbon emissions per ton of cargo handled by 30% by 2030.
- ✓ The Maritime Vision Document 2030 is a 10 Year blueprint on India's vision of a sustainable Maritime sector and vibrant blue economy.
- ✓ India has been selected as the first country under the IMO's Green Voyage 2050 project to conduct a pilot project related to Green Shipping.

**9. NCW Launches Digital Shakti 4.0:**

- The National Commission for Women (NCW) has recently launched the fourth phase of the Digital Shakti Campaign.
- NCW launched it in collaboration with CyberPeace Foundation and Meta.

**About:**

- Digital Shakti started in June 2018 to help women across the nation to raise the awareness level on the digital front.
- It is helping women in reporting & redressal mechanisms, data privacy and usage of technology for their benefits.
- The third phase of the program was started in March 2021 with the launch at Leh.
- Digital Shakti 4.0 is focused on making women digitally skilled and aware to stand up against any illegal/inappropriate activity online.
- It aims to ensure safe cyber spaces for women.

**Achievements:**

- Through the Digital Shakti project, over 3 Lakh women across India have been made aware of cyber safety tips and tricks, reporting & redressal mechanisms, data privacy and usage of technology for their benefits.

**What is National Commission for Women?**

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- It was set up as a statutory body in January 1992 under the National Commission for Women Act, 1990.
- Its mission is to strive towards enabling women to achieve equality and equal participation in all spheres of life by securing her due rights and entitlements through suitable policy formulation, legislative measures, etc.

**Its functions are to:**

- Review the constitutional and legal safeguards for women.
- Recommend remedial legislative measures.
- Facilitate redressal of grievances.
- Advise the Government on all policy matters affecting women.

**10. Day of Eight Billion:**

- According to the United Nations Population Fund (UNPFA), the human population across the globe touched 8 billion.
- As of 2022, more than half the world's population lives in Asia, China and India being the two most populous countries with more than 1.4 billion people each.

**Overall Decrease in Population Growth Rate:**

- According to UN, it took the global population 12 years to grow from 7 billion to 8 billion, it will take approximately 15 years until 2037, for it to reach 9 billion.
- This indicates that overall growth rate of global population is slowing.
- The UN population report said the global population is growing at its slowest rate since 1950, having fallen under 1% in 2020.
- The world's population could grow to around 8.5 billion in 2030 and 9.7 billion in 2050.
- It is projected to reach a peak of around 10.4 billion people during the 2080s and to remain at that level until 2100.
- According to the UN, 60% of the global population lives in a region where the fertility rate is below replacement level.
- In 1990, 40% lived in a region where fertility rate was below replacement level.

**High-Fertility Levels in Poor Countries:**

- Countries with the highest fertility levels tend to be those with the lowest income per capita.
- More than half of the projected increase in the global population up to 2050 will be concentrated in eight countries: the Democratic Republic of the Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and the United Republic of Tanzania.
- Countries of sub-Saharan Africa are expected to contribute more than half of the increase anticipated through 2050.

**International Migration:**

- International migration is now the driver of growth in many countries, with 281 million people living outside their country of birth in 2020.
- All South Asian nations including India, Pakistan, Nepal, Bangladesh and Sri Lanka have seen high levels of emigration in recent years.



## What are the Findings about India's Population?

### Stabilising Population Growth:

- According to UN, India's fertility rate has hit 2.1 births per woman i.e., replacement-level fertility and is further declining.
- While India's population growth is stabilising, it is "still growing at 0.7% per year" and is set to surpass China in 2023 as the world's most populous country.
- According to UN, China's population is no longer growing and may start declining as early as 2023.
- The World Population Prospects 2022, put India's population estimate at 1.412 billion in 2022, compared with China's 1.426 billion.
- India is likely to peak at 1.7 billion population in 2048 and then start declining to 1.1 billion at the end of century.

### World's Largest Adolescent Population:

- According to UNFPA estimates, 68% of India's population is between 15-64 years old in 2022, while people aged 65 and above comprise 7% of the population.
- Over 27% of the country's population is between the age of 15-29.
- At 253 million, India is also home to the world's largest adolescent population (10-19 years).
- India has its largest ever adolescent and youth population.
- India will continue to have one of the youngest populations in the world till 2030 and is currently experiencing a demographic window of opportunity, a "youth bulge" that will last till 2025.

## What is the United Nations Population Fund?

### About:

- It is a subsidiary organ of the UN General Assembly and works as a sexual and reproductive health agency.
- The UN Economic and Social Council (ECOSOC) establishes its mandate.

### Establishment:

- It was established as a trust fund in 1967 and began operations in 1969.
- In 1987, it was officially renamed the United Nations Population Fund but the original abbreviation, 'UNFPA' for the United Nations Fund for Population Activities was retained.

### Objective:

- UNFPA works directly to tackle Sustainable Development Goals on health (SDG3), education (SDG4) and gender equality (SDG5).

### Funding:

- UNFPA is not supported by the UN budget, instead, it is entirely supported by voluntary contributions of donor governments, intergovernmental organizations, the private sector, foundations and individuals.

### Way Forward:

- To maximize the potential benefits of a favourable age distribution, countries need to invest in the further development of their human capital by ensuring access to health care and quality education at all ages and by promoting opportunities for productive employment and decent work.
- India is at a stage of demographic transition where mortality rates are declining and fertility rates would decline in the next two to three decades or so. India can now focus on eliminating the need for contraception.

- Women can decide if they want to have children, and if yes, when, how many, and at what intervals.
- For young and adolescent populations, there is a need for skilling, which is the only way to ensure they are more productive and have better incomes.

### **11. WHO's Global Vaccine Market Report 2022:**

- Recently, the World Health Organisation (WHO) released 'Global Vaccine Market Report 2022'.
- This is the first report to capture the implications of Covid-19 for vaccine markets highlighting the issue of vaccine inequity.

#### **What are the Findings of the Report?**

##### **Vaccine Inequity, not a Unique Phenomenon:**

- It shows that inequitable distribution is not unique to Covid-19 vaccines, with low-income countries consistently struggling to access vaccines that are in-demand by high-income countries. Limited vaccine supply and unequal distribution drive global disparities.
- The human papillomavirus (HPV) vaccine against cervical cancer has only been introduced in 41% of low-income countries, even though they represent much of the disease burden, compared to 83% of high-income countries.

##### **Price Disparities:**

- Affordability is a major obstacle to vaccine access. While prices tend to be tiered by income, price disparities see middle-income countries paying as much - or even more - than wealthier ones for several vaccine products.

##### **Free-Market Dynamics:**

- Free market dynamics is depriving some of the world's poorest and most vulnerable people of their right to health. Therefore, changes are much needed to the global vaccine market to save lives, prevent disease and prepare for future crises.

##### **Scale-up during Health Emergencies:**

- Approximately 16 billion vaccine doses, worth US\$ 141 billion, were supplied in 2021, almost three times the 2019 market volume (5.8 billion) and nearly three-and-a-half times the 2019 market value (US\$ 38 billion).
- The increase was primarily driven by Covid-19 vaccines, showing the incredible potential of how vaccine manufacturing can be scaled up in response to health needs.

##### **Concentrated Manufacturing Base:**

- Although manufacturing capacity worldwide has increased, it remains highly concentrated.
- Ten manufacturers alone provide 70% of vaccine doses (excluding COVID-19).
- Several of the top 20 most widely used vaccines (such as PCV, HPV, measles and rubella containing vaccines) each currently rely mainly on two suppliers.
- In 2021, the African and Eastern Mediterranean regions were dependent on manufacturers headquartered elsewhere for 90% of their procured vaccines.
- This concentrated manufacturing base leads to risk of shortages as well as regional supply insecurity.
- Entrenched intellectual property monopolies and limited technology transfer further limit the ability of building and using local manufacturing capacity.

##### **Limited Investment in Vaccines Other than Covid-19:**

- The health of markets is also concerning for several of the vaccines commonly needed for emergencies, such as against cholera, typhoid, smallpox/monkeypox, Ebola, meningococcal disease, where demand surges with outbreaks and is hence less predictable.
- The continued limited investment in these vaccines could be devastating for people's lives.

#### **Immunization Agenda 2030 (IA2030):**

- The report highlights the opportunities for more alignment of vaccine development, production and distribution with a public health agenda, towards achieving the Immunization Agenda 2030 (IA2030) goals and informing pandemic prevention, preparedness, and response efforts.

#### **What are the Recommendations of the Report?**

##### **For Governments:**

- Frame clear immunization plans and more aggressive investment
- Get a stronger oversight of vaccine development, production and distribution
- Emphasise on regional research and manufacturing hubs
- Devise pre-agreeing rules for government collaboration in times of scarcity on issues such as vaccine distribution, intellectual property and the circulation of inputs and goods.

##### **For Industry:**

- Focus on research efforts for WHO priority pathogens
- Ensure transparency.
- Facilitate technology transfer.
- Commit to specific equity-driven allocation measures.
- For International Organizations and Partners:
- Prioritize Immunization Agenda 2030 goals.
- Support country-driven initiatives.
- Push for the application of resolutions on market transparency.

#### **12. Pakistan to Implement Interest-free Banking System:**

- The Pakistan Government is planning to implement an interest-free banking system in the country from 2027 under the Islamic law.
- The concept of interest free banking system is derived from the Islamic form of banking. It operates based on ethical standards and prevents Muslims from paying or receiving any kind of interest. It is considered to be an effective tool to achieve the economic objectives of Islam.
- **Pakistan's** finance minister announced that the government has decided to implement the FSC's decision to get rid of the interest-based banking system in the country. He announced that Pakistan's central bank and largest state-owned bank – National Bank of Pakistan – will withdraw their appeals from the apex court challenging the ruling of the FSC.
- Over the years, several banks have been established to provide completely sharia-compliant services while conventional banks have also introduced interest-free products and instruments in compliance with the Islamic law. Meezah Baank – Pakistan's first completely Islamic bank – was established in the early 2000s. It was followed by banks

establishing several Islam subsidiaries to follow similar principles. These banks currently have over 20 per cent share in Pakistan's banking industry.

**Key Points:**

- The first petition to abolish the existing interest-based banking system in Pakistan was filed in 1990 at the Federal Shariat Court (FSC) – the constitutional court that has the power to examine and determine whether the Pakistani laws comply with the Sharia law.
- In 1992, a three-member bench at the FSC sought the implementation of the interest-free banking system in the country.
- The government of Pakistan challenged this decision in the country's Supreme Court.
- In 1999, the Supreme Court upheld the FSC's decision and again directed the government authorities to implement the system by June 30, 2000.
- In 2002, a review appeal was filed at the apex court and the decision of the FSC was suspended. The case was referred back for the FSC's interpretation.
- In April 2022, the FSC again called for abolishing interest-based system in five years since it goes against the Sharia law.
- It called on the government to eliminate Riba – the Islamic term for interest – from the country's banking system by December 31, 2027.
- Government borrowings from domestic and foreign sources also come under the definition of Riba and is prohibited under Islamic law.
- However, the FSC's ruling clarifies that Pakistan is bound to honour the existing international financial commitments, though they do not comply with the sharia laws.

**13. Fodder-Centric Farmer Producer Organisations:**

- The Indian Government designated National Dairy Development Board (NDDB) as the implementing agency for setting up fodder-centric FPOs.
- What are fodder-centric Farmer Producer Organisations?
- Ministry of Fisheries, Animal Husbandry and Dairying proposed the setting up of fodder-centric FPOs in 2020 to address the fodder deficit situation in India. It requested the Union Agriculture Ministry to permit the establishment of fodder-centric FPOs under the central scheme "Formation and Promotion of 10,000 new FPOs". National Dairy Development Board (NDDB) has been designated as the implementing agency for this scheme.
- During 2020-23, 100 of these FPOs will be set up by NDDB under this scheme. These will be mainly fodder-centric, with animal husbandry activates as a secondary activity (fodder plus model).

**Why is this scheme needed?**

- The Wholesale Price Index-based fodder inflation has surged to a nine-year high of 25.5 per cent in August this year. The prices of dry fodder have remained high in 2022 when compared with the previous year's prices. This has adversely affected the lives of rural families whose livelihoods rely on livestock sector.
- According to the 'Situation Assessment of Agricultural Households and Land and Livestock Holdings of Households in Rural India, 2019' report released by the National Statistical Office (NSO), 48.5 per cent of the total 17.24 crore rural households own cattle "in milk", young cattle and cattle in "others" category in 2018. Of the total 9.3 crore

agricultural households, 42.8 per cent used green fodder, 52.4 per cent of agricultural households used dry fodder, 30.4 per cent used concentrated fodder and 12.5 per cent other animal feed during the same period.

- Currently, fodder deficit in India is 12 to 15 per cent for green fodder, 25-26 percent for dry fodder and 36 per cent for concentrated fodder. The deficit is caused by seasonal and regional factors. The high WPI-based fodder inflation is caused by the decline in wheat crops and the surge in input cost like diesel.

#### **14. Plan to Promote Millet Exports:**

- The Union Ministry of Commerce, via its apex agricultural export promotion body, Agricultural and Processed Food Products Export Development Authority (APEDA), has formulated a plan to promote millet export from India from December 2022.

#### **What are the key features of the plan?**

- Promotion of participation of exporters, farmers and traders in 16 international trade expos and Buyer Seller Meets (BSMs)
- Indian missions in foreign countries will be involved in branding and publicizing Indian millet. They will identify international chefs as well as potential customers like departmental stores, supermarkets and hypermarkets for organizing business-to-business meetings and direct tie-ups.
- Ambassadors of the foreign missions in India from certain countries having potential millet markets will be invited to showcase millet-based products and facilitate B2B meetings.
- Millet promotional activities will be organized by APEDA in South Africa, Dubai, Japan, South Korea, Indonesia, Saudi Arabia, Australia, Belgium, Germany, the United Kingdom and the United States.
- Millet and millet-based value added products will be showcased in various global platforms like Gulfood 2023, Foodex, Seoul Food & Hotel Show, Saudi Agro Food, Fine Food Show in Sydney (Australia), Belgium's Food & Beverages Show, Germany's BioFach and Anuga Food Fair, San Francisco's Winter Fancy Food Show and others.
- These events will facilitate participation of various stakeholders in the Indian millet industry in major food shows, buyer-seller meets and roadshows.

#### **International Year of Millets:**

- The United Nations General Assembly declared 2023 as the International Year of Millets. It was adopted by an India-led UNGA resolution that was supported by some 70 countries. It aims to:
  - Raise public awareness about the contribution of millet in boosting food and nutritional security
  - Promote sustainable production of millets
  - Boost investment in research and development and supportive services to achieve the other two objectives.
- The Indian Government is currently organizing the International Year of Millets at the domestic and international levels to popularize Indian millets and value added products by making it a people's movement.

#### **15. MHA Mother Tongue Survey:**

- The Ministry of Home Affairs (MHA) has completed the Mother Tongue Survey of India (MTSI) with field videography of the country's 576 languages.

**About:**

- According to the report, the Mother Tongue Survey of India is a project that “surveys the mother tongues, which are returned consistently across two and more Census decades”.
- It also documents the linguistic features of the selected languages.
- The report states that the NIC and the National Film Development Corporation (NFDC) will be documenting and preserving the linguistic data of the surveyed mother tongues in audio-video files.
- Video-graphed speech data of Mother Tongues will also be uploaded on the NIC survey for archiving purposes.
- Linguistic Survey of India (LSI) is a regular research activity in the country since the 6th Five Year Plan.

**How many “mother tongues” does India have, and what is spoken the most?**

- As per an analysis of 2011 linguistic census data in 2018, more than 19,500 languages or dialects are spoken in India as mother tongues.
- The category “mother tongue” is a designation provided by the respondent, but it need not be identical with the actual linguistic medium.
- After subjecting the 19,569 returns to linguistic scrutiny, edit and rationalisation, they were grouped into 121 mother tongues.
- According to the 2011 linguistic census, Hindi is the most widely spoken mother tongue, with 52.8 crore people or 43.6 per cent of the population declaring it as the mother tongue.
- The next highest is Bengali, mother tongue for 9.7 crore individuals, and accounting for 8 per cent of the population.

**Mother tongue in the education of children:**

- The new National Curriculum Framework (NCF) for the foundational stages of education, has recommended that mother tongue should be the primary medium of instruction in schools for children up to eight years of age.
- The focus on mother tongue as the medium of instruction, especially for primary schooling, has been a feature of education policies for years.
- The new NCF, which deals with pre-school and classes I-II, emphasises the virtues of the mother tongue as the primary medium of instruction, saying that by the time children join pre-school, they acquire significant competence in the “home language”.
- According to the NCF, evidence from research confirms the importance of teaching children in their mother tongue during the foundational years and beyond.
- NCF also states that since children learn concepts most rapidly and deeply in their home language, the primary medium of instruction would optimally be the child’s home language/ mother tongue/ familiar language in the Foundational Stage.

**16. India Infrastructure Project Development Fund Scheme:**

- Recently, the Department of Economic Affairs (DEA), Ministry of Finance notified Scheme for Financial Support for Project Development Expenses of PPP Projects – India Infrastructure Project Development Fund Scheme (IIPDF Scheme).

**What is it?**

- It is a Central Sector Scheme which will aid the development of quality PPP projects by providing necessary funding support to the project sponsoring authorities, both in the Central and State Governments.

**Funding:**

- The corpus of the IIPDF shall comprise of initial budgetary outlay of Rs. 100 Crore by the Ministry of Finance. This would be supplemented, should it become necessary, through budgetary support by the Ministry of Finance from time to time.
- Funding under IIPDF Scheme is in addition to the already operational Scheme for Financial Support to PPPs in Infrastructure (VGF Scheme).
- Organisational Structure: The IIPDF will be administered by the Empowered Institution.

**The Empowered Institution will:**

- Select projects for which project development costs will be funded.
- Set the terms and conditions under which the funding will be provided and recovered.
- Set milestones for disbursing and recovering (where appropriate) the funding.
- The Public Private Partnership Cell of the DEA will provide support functions examine the applications received for assistance under IIPDF.

**17. WTW Global Gender Wealth Equity report:**

- WTW's Global Gender Wealth Equity Report 2022 was released recently.

**About Global Gender Wealth Equity Report:**

- Global Gender Wealth Equity Report was jointly developed by WTW and the World Economic Forum (WEF). It explores gender-based wealth differences across five regions in the world. It assesses the reasons behind the inequality like interlinked effects of career, family support, life events and financial literacy. It quantifies gender wealth gap between women and men at retirement.

**What are the key findings of the report?**

- According to the report, when women retire from work, will have just 74 per cent of wealth accumulated by men.
- This is mainly because of the pay gaps and delays in promotion.
- India has the worst gender wealth gap in the Asia-Pacific. The reasons for this are:
- India's gender pay gap is higher than the global average. It is prevalent especially in professional and technical roles.
- Leadership roles for women are limited. Only 3 per cent of women in workforce hold senior-level positions.
- Women assume childcare responsibilities at a young age. This adds to the financial burdens that cannot be borne alone.
- Long-term financial decisions generally rests in the hands of men
- Financial literacy of working women is low in India.
- On average, Asia-Pacific has one of the lowest global wealth gaps. Women in this region amass just around three-quarters (76 per cent) of men's wealth levels, just 2 points above the global average.
- In the Asia-Pacific region, gender wealth gap across 12 markets is between 64 per cent in India and 90 per cent in South Korea (best performer in the region).
- The overall gender wealth gap at retirement increases with seniority. At the international level, women in senior expert and leadership positions have less than two-

third (62 per cent) of the total wealth of their male counterparts at the time of their retirement.

- A gap of 67 per cent was found at the mid-level professional and technical roles. This narrowed to 89 per cent for frontline operational roles.
- Women in six markets in the index have higher wealth at retirement when compared with the global average. These include China (78 per cent), Japan (82 per cent), Philippines (79 per cent) and Singapore (79 per cent).

#### **18. State of Food and Agriculture Report 2022:**

- Recently, the 2022 edition of the State of Food and Agriculture report by the Food and Agriculture Organization (FAO) was released.
- The flagship report is produced each year.
- The report looked at how automation in our agrifood systems can contribute to achieving Sustainable Development Goals and offers recommendations to policy makers on how to maximize the benefits and minimize the risks.

#### **What is Agriculture Automation?**

- Agricultural automation, which includes anything from tractors to artificial intelligence, plays an important role in making food production more efficient and environmentally friendly.
- But it can also deepen inequalities if it remains inaccessible to small-scale producers and other marginalised groups.

#### **What are the Highlights of the Report?**

- The report looked at 27 case studies from all over the world, representing different technologies.
- Only 10 of the 27 service providers are profitable and financially sustainable.
- There is an unequal progress toward mechanization among regions, according to available statistics on the number of tractors per 1,000 hectares of arable land.
- High-income countries in North America, Europe and Oceania were highly mechanised by the 1960s. But regions dominated by low-and middle-income countries were less mechanised.
- Crucially, there are wide disparities in the spread of automation between and within countries, with adoption being particularly limited in sub-Saharan Africa.
- For instance, Japan had more than 400 tractors per 1,000 hectares of arable land, compared with just 0.4 in Ghana in 2005.
- Agriculture reliant on human and animal power continues to dominate in sub-Saharan Africa, limiting productivity.

#### **Major Recommendations:**

- An agricultural automation policy should ensure that agrifood systems are sustainable and resilient.
- Policymakers should avoid subsidising automation in such labour-abundant contexts.
- Agricultural automation can lead to unemployment in places where rural labour is abundant and wages are low.
- Policymakers should focus on creating an enabling environment for adopting automation.
- Social protection should be provided to the least skilled workers, who are more likely to lose their jobs during the transition.



## What is the Food and Agriculture Organization?

### About:

- FAO is a specialised agency of the United Nations that leads international efforts to defeat hunger.
- World Food Day is celebrated every year around the world on 16th October. The day is celebrated to mark the anniversary of the founding of the FAO in 1945.
- It is one of the UN food aid organisations based in Rome (Italy). Its sister bodies are the World Food Programme and the International Fund for Agricultural Development (IFAD).

## Science and Technology

### 1. India's First Private Space Vehicle:

- Recently, Chennai-based space tech startup Agnikul Cosmos inaugurated India's first private space vehicle launchpad at the Satish Dhawan Space Centre (SDSC) in Sriharikota.
- It was executed in support of the Indian Space Research Organisation (ISRO) and IN-SPACe (Indian National Space Promotion and Authorization Center).

### What is Agnikul's Launchpad Facility?

- The facility has two parts: the Agnikul launchpad and the Agnikul mission control centre, which are four kilometres apart.
- The launchpad has been designed to accommodate and support liquid stage-controlled launches.
- Agnikul Cosmos is planning to launch its Agnibaan rocket from this launchpad.

### Significance:

- The launchpad is specifically built to address the need for ISRO's range operations team to monitor key flight safety parameters during launches.
- Additionally, it has the ability to share data and other critical information with ISRO's Mission Control Center.

### What is Agnibaan?

- Agnibaan is a two-stage launch vehicle that is capable of taking payloads of up to 100 kilograms to a low-earth orbit around 700 kilometres from the surface of the Earth.
- It will be powered by the company's 3D-printed Agnilet engines.
- Agnilet is the world's first single-piece 3-D printed engine fully designed and manufactured in India and was successfully test-fired in early 2021, making Agnikul the first company in the country to test its engines at ISRO.
- The Agnilet rocket is a "semi-cryogenic" engine that uses a mixture of liquid kerosene and supercold liquid oxygen to propel itself.
- The engine is very complex and it functions at very high temperatures.

### 2. New Artificial Photosynthetic System to Capture Solar Energy:

- Researchers from IISER-Thiruvananthapuram and IIT-Indore have jointly developed an artificial light-harvesting system that will help capture solar energy.

### About the artificial light-harvesting system:

- Scientists have a novel artificial light-capturing system that imitates the process of photosynthesis to effectively capture light to conserve power. This technology addresses various challenges faced while replicating the complex process of photosynthesis as well as the problems associated with light absorbers and transmitters.

#### Why is the new artificial light-harvesting system significant?

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- Scientists have long sought to mimic the process of photosynthesis (the process through which plants absorb sunlight and produce sugars) to be used in solar cells or artificial leaves. Many have tried to replicate the molecular and atomic structure of light-harvesting mechanism of plants in the laboratory environment. They have made use of polymeric structures, detergent-type molecules, vesicles, gels, and other bio-inspired structures to achieve this feat. Most common hurdle faced by these technologies is the aggregation or clumping of the molecules, which makes it difficult to effectively capture and conserve the light.
- The new artificial photosynthetic system makes use of clusters of silver with a nanometer dimension, which is a hundred thousand times smaller than the width of human hair. These silver nanoclusters have complicated and exotic photophysical properties. The researchers were able to stabilize them with bulky ligands and entrap the entire ensemble inside another larger molecule called cyclodextrin. This is the first time that an atom-precise nanoclusters were used for this application. It provides 93 per cent effective energy transfer because of the presence of opposite charges on the surface and the matched electronic energy distribution. The harvested energy can generate currents having higher yields than individual components.
- The new technology paves the way for designing of new light-harvesting materials that can improve the efficiency of solar cells and minimize the energy loss. Such technologies will help countries achieve their net zero carbon emissions and meet future energy needs through renewable energy sources.

#### 3. Muscat Ministerial Manifesto on AMR:

- The World Antimicrobial Awareness Week 2022 concluded recently with the Muscat Ministerial Manifesto on AMR being agreed upon at the Third Global High-level Ministerial Conference on Antimicrobial Resistance (AMR).

#### Key Points:

- This Conference is a follow up of two earlier high level conferences held in the Netherlands in 2014 and 2019.
- **Theme of the Conference:** The AMR Pandemic: From Policy to One Health Action.

#### What are the three Global Targets?

- Reducing the total amount of antimicrobials used in agrifood systems by at least 30 per cent-50 per cent by 2030.
- Preserving critically important antimicrobials for human medicine and ending the use of medically important antimicrobials for growth promotion in animals.
- Ensuring that 'Access' group antibiotics (a category of antibiotics that are affordable, safe and have a low AMR risk) represent at least 60 percent of overall antibiotic consumption in humans by 2030.

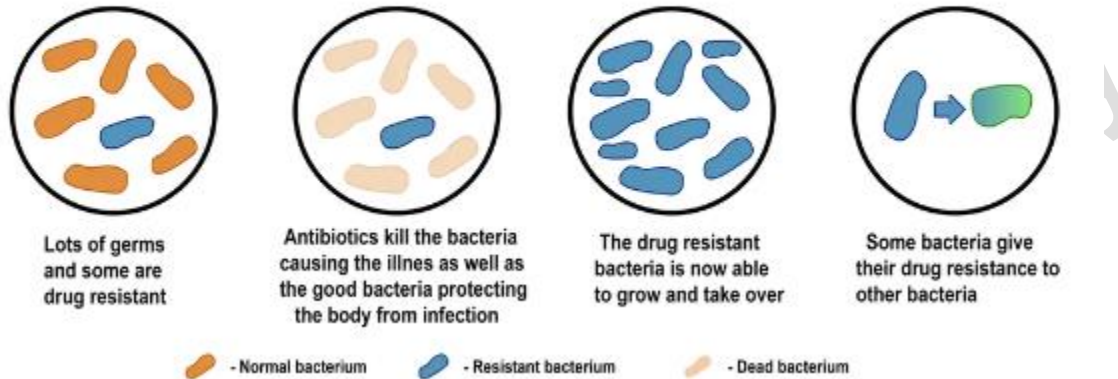
#### Countries endorsing the manifesto:

- The Manifesto has been endorsed by 34 of the 45 countries that participated at the conference.

#### What is Antimicrobial Resistance (AMR)?

- Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.

## HOW ANTIBIOTIC RESISTANCE HAPPENS



### Emergence and spread of AMR:

- AMR occurs naturally over time, usually through genetic changes.
- Antimicrobial-resistant organisms are found in people, animals, food, plants and the environment (in water, soil and air).
- They can spread from person to person or between people and animals, including from food of animal origin.
- The main drivers of antimicrobial resistance include:
  - The misuse and overuse of antimicrobials,
  - Lack of access to clean water, sanitation and hygiene (WASH) for both humans and animals,
  - Poor infection and disease prevention and control in healthcare facilities and farms,
  - Poor access to quality,
  - Affordable medicines, vaccines and diagnostics,
  - Lack of awareness and knowledge, and
  - Lack of enforcement of legislation.

### Factors Causing AMR in India:

- ✓ Inappropriate consumption of broad-spectrum (last resort) antibiotics is high because of changing prescription practice in the healthcare system due to the non-availability of a narrow spectrum of antibiotics.

- ✓ Inappropriate antibiotic use among the general public like Self-medication to avoid the financial burden.
- ✓ The large proportion of sewage is disposed of untreated into receiving water bodies, leading to gross contamination of rivers with antibiotic residues, antibiotic-resistant organisms.
- ✓ What are Antimicrobials?
- ✓ Antimicrobials - including antibiotics, antivirals, antifungals and antiparasitics - are medicines used to prevent and treat infections in humans, animals and plants.

## WHAT'S AMR?

Resistance of a micro-organism to an antibiotic that was originally effective in treating infections caused by it

### Why India needs to curb antibiotic overuse

- India's bacterial disease burden is highest in the world
- Large population suffers from diseases like diabetes, heart ailments and cancer, making them prone to infections
- 40% children are malnourished and at risk of infections
- More and more drug-resistant bacteria are being identified



### Challenges Posed by AMR:

- Antibiotic resistance is emerging as the threat to successful treatment of infectious diseases, organ transplantation, cancer chemotherapy and major surgeries.
- The issue of AMR causes out of pocket expenditure on health care, especially on medicines. The use of high order drugs or second-line expensive antibiotics pushing treatment cost high.
- Neonates and elderly both are prone to infections and are vulnerable.

### Various Initiatives Adopted In This Aspect:

#### **Global Efforts:**

- Global Action Plan on Antimicrobial Resistance (GAP): Globally, countries committed to the framework set out in the Global Action Plan1 (GAP) 2015 on AMR during the 2015 World Health Assembly and committed to the development and implementation of multisectoral national action plans.
- Tripartite Joint Secretariat on Antimicrobial Resistance: Tripartite joint secretariat (FAO, OIE and WHO) has been established and is hosted by WHO to drive multi-stakeholder engagement in AMR.
- Interagency Coordination Group (IACG) on AMR: It was convened by the Secretary-General of the United Nations after the UN High-Level Meeting on Antimicrobial Resistance in 2016.
- The IACG brought together partners across the UN, international organizations and individuals with expertise across human, animal and plant health, as well as the food, animal feed, trade to formulate a plan for the fight against antimicrobial resistance.

#### **World Antimicrobial Awareness Week (WAAW):**

- WAAW was previously called the World Antibiotic Awareness Week. From 2020, it will be called the World Antimicrobial Awareness Week.
- It is a global campaign that aims to raise awareness of antimicrobial resistance worldwide.

#### **Global Antimicrobial Resistance and Use Surveillance System (GLASS):**

- WHO launched it in 2015 to continue filling knowledge gaps and to inform strategies at all levels.
- GLASS has been conceived to progressively incorporate data from surveillance of AMR in humans, surveillance of the use of antimicrobial medicines, AMR in the food chain and the environment.

- Global Antibiotic Research and Development Partnership (GARDP): A joint initiative of WHO and the Drugs for Neglected Diseases Initiative (DNDi), GARDP encourages research and development through public-private partnerships.
- By 2025, the partnership aims to develop and deliver five new treatments that target drug-resistant bacteria identified by WHO as posing the greatest threat.

Page|29 **Country wise initiatives:**

- A multi-sectoral \$1 billion AMR Action Fund was launched in 2020 to support the development of new antibiotics, and the U.K. is trialling a subscription-based model for paying for new antimicrobials towards ensuring their commercial viability.
- Peru's efforts on patient education to reduce unnecessary antibiotic prescriptions.
- Australian regulatory reforms to influence prescriber behaviour, and initiatives to increase the use of point-of-care diagnostics, such as the EU-supported VALUE-Dx programme.
- Denmark's reforms to prevent the use of antibiotics in livestock have not only led to a significant reduction in the prevalence of resistant microbes in animals, but also improved the efficiency of farming.

**India's initiative:**

- To prevent the Over the counter sales of antibiotics, the central drug standard control organization(CDSO) prohibits medical stores from selling 24 key antibiotics without a doctor's prescription.

**India's Red Line campaign:**

- Which demands that prescription-only antibiotics be marked with a red line, to discourage the over-the-counter sale of antibiotics- is a step forward.
- National Health Policy, 2017, terms antimicrobial resistance as one of the key healthcare issues and prioritizes the development of guidelines regarding antibiotic use and check on restricting the growth of antibiotics.
- The National Action Plan on Antimicrobial Resistance (NAP-AMR) 2017 has assigned coordinated tasks to multiple government agencies involving health, education, environment, and livestock to change prescription practices and consumer behaviour and to scale up infection control and antimicrobial surveillance.
- FSSAI has set certain guidelines limiting the antibiotics in food products such as fish and honey.

**The Bottom Line:**

- Countries should Revise and effectively implement National Action Plans (NAP) for AMR
- Countries should Strengthen their surveillance systems.
- The Quadripartite organisations provide guidance and technical support for implementation of the targets.
- Different stakeholders in human health, animal health, environment sectors come together to be able to implement AMR NAPs, through appropriate engagement of civil society, private sector, and public and private partnerships.
- There is a need for mobilisation of financial resources from public and private financing institutions for NAP-AMR implementation. This is to be done to:
- Enable improved access to innovations (new antimicrobials, vaccines, diagnostics, waste management tools, alternatives to antimicrobials) and

- For the development and implementation of innovative and safe infection prevention and control practices.
- AMR is a silent and invisible pandemic that cannot be overshadowed by other competing public health priorities so should be made a priority.
- It is important to have political support and collaboration at the international, national and sub-national levels to tackle the challenge posed by AMR.

#### 4. ISRO Launches Nine Satellites Aboard PSLV-C54:

- Recently, the Indian Space Research Organisation (ISRO) has successfully launched the Polar Satellite Launch Vehicle (PSLV) C54 from the Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh.
- This was the 56th flight of PSLV, which marks the final mission for the year for PSLV-C54 rocket.

#### What are the Satellites Launched?

##### Nano Satellite-2 for Bhutan (INS-2B):

- INS-2B satellite is a collaborative mission between India and Bhutan with two payloads.
- NanoMx, a multispectral optical imaging payload developed by Space Applications Centre (SAC)
- APRS-Digipeater which is jointly developed by DITT-Bhutan and URSC was successfully deployed.

##### Significance of INS-2B:

- It will provide high-resolution images to Bhutan for the management of the country's natural resources.
- The launch of the new satellite is part of India's efforts to back Bhutanese King Jigme Khesar Namgyel Wangchuck's plans to use advanced technology, including ICT and space technology, for the development of Bhutan.
- The collaboration also fits in with India's "neighbourhood first" policy.

##### Anand:

- The Anand three axis stabilized Nano satellite is a technology demonstrator for miniaturized electro-optical payload and all other sub-systems like TTC, power, onboard computer and ADCS from Pixxel, India was also placed in the orbit successfully.

##### Astrocast:

- Astrocast, a 3U spacecraft, is a technology demonstrator satellite for the Internet of Things (IoT) as the payload. There are 4 nos. of Astrocast Satellites in this mission. These spacecrafts are housed within an ISISpace QuadPack dispenser.
- The dispenser protects the satellite from contamination.

##### Thybolt Satellites:

- The Thybolt is a 0.5U spacecraft bus that includes a communication payload to enable rapid technology demonstration and constellation development for multiple users from Dhruva Space using their own Orbital Deployer with a minimum lifetime of 1 year.

##### EOS-6:

- Earth Observation Satellite-06 (EOS-06) is the Oceansat series' 3rd-generation satellite envisaged to observe ocean colour data, sea surface temperature and wind vector data to use in oceanography, climatic and meteorological applications.

- The satellite also supports value added products such as potential fishing zones using chlorophyll, Sea Surface Temperature (SST) and wind speed and land based geophysical parameters.

#### 5. 200th Consecutive Launch of RH200:

- The Indian Space Research Organisation (ISRO) is going to attempt the 200th consecutively successful launch of the Rohini RH-200 sounding rocket.
- RH-200 is a two-stage rocket capable of climbing to a height of 70 km bearing scientific payloads.
- The first and second stages of RH-200 are powered by solid motors.
- For years, the RH-200 rocket had used a polyvinyl chloride (PVC)-based propellant.
- The first RH-200 to use a new propellant based on hydroxyl-terminated Polybutadiene (HTPB) was successfully flown from the TERLS in September 2020.
- As compared to PVC-based propellants, HTPB-based propellant is more energetic, has higher mechanical & interface properties, and has fewer defects due to lower processing temperature.
- The '200' in the name denotes the diameter of the rocket in mm. Other operational Rohini variants are RH-300 Mk-II and RH-560 Mk-III.

#### What are sounding Rockets?

- Sounding rockets are one or two-stage solid propellant rockets used for probing the upper atmospheric regions and for space research.
- Sounding rockets take their name from the nautical term "to sound," which means to take measurements.
- They also serve as easily affordable platforms to test or prove prototypes of new components or subsystems intended for use in launch vehicles and satellites.
- The first sounding rocket to be launched from Thumba was the American Nike-Apache - on November 21, 1963.
- After that, two-stage rockets imported from Russia (M-100) and France (Centaure) were flown.
- The ISRO launched its own version - Rohini RH-75 - in 1967.

#### Rohini (Rocket family):

- Rohini is a series of sounding rockets developed by the Indian Space Research Organisation (ISRO) for meteorological and atmospheric study.
- These sounding rockets are capable of carrying payloads of 2 to 200 kilograms between altitudes of 100 to 500 kms.

#### Operational sounding Rockets:

- Currently, three versions are offered as operational sounding rockets, which cover a payload range of 8-100 Kg and an apogee range of 80-475 km.

#### 6. Project 22220:

- Recently, Russia touted its Arctic power at a flag-raising ceremony and dock launch for two nuclear-powered icebreakers that will ensure year-round navigation in the Western Arctic.

### **What is the Significance of the Russian Icebreakers?**

- ✓ To Strengthen Russia's Status as a Great Arctic power:
- ✓ Both icebreakers were laid down as part of Russia's large-scale, systematic work to re-equip and replenish the domestic icebreaker fleet, to strengthen Russia's status as a "great Arctic power."
- ✓ In the last two decades, Russia has reactivated several Soviet era Arctic military bases and upgraded its capabilities.

### **For Studying Arctic Region:**

- ✓ For Russia, it is essential to study and develop the Arctic, to ensure safe, sustainable navigation in this region, and to increase traffic along the northern sea route.

### **Cut Down Time to Reach Asia:**

- ✓ The development of this most important transport corridor will allow Russia to more fully unlock its export potential and establish efficient logistics routes, including to South East Asia.
- ✓ For Russia, the opening of the Northern Sea Route will cut down time to reach Asia by up to two weeks compared to the current route via the Suez Canal

### **What is the Significance of the Arctic Region?**

#### **Economic Significance:**

- The Arctic region has rich deposits of coal, gypsum and diamonds and also substantial reserves of zinc, lead, placer gold and quartz. Greenland alone possesses about a quarter of the world's rare earth reserves.
- The Arctic already supplies the world with roughly 10% of its oil and 25% of its natural gas, mostly from onshore sources. It is also estimated to hold 22% of the Earth's undiscovered oil and natural gas reserves.
- Geographical Significance: The Arctic helps circulate the world's ocean currents, moving cold and warm water around the globe.
- Also, Arctic Sea ice acts as a huge white reflector at the top of the planet, bouncing some of the sun's rays back into space, helping keep the Earth at an even temperature.

#### **Strategic Importance:**

- The Arctic is taking on greater strategic significance due to climate change, as a shrinking ice cap opens up new sea lanes.
- There has been a race among Arctic states and near-arctic states to augment their capabilities in a bid to be ready to capitalize on the melting Arctic.
- Eg: North Atlantic Treaty Organization (NATO) has been conducting regular exercises in the region.
- China, which calls itself a near-Arctic state, has also announced an ambitious plan for a polar silk route to connect to Europe.

#### **Environmental Significance:**

- The Arctic and the Himalayas, though geographically distant, are interconnected and share similar concerns.
- The Arctic meltdown is helping the scientific community to better understand the glacial melt in the Himalayas, which has often been referred to as the 'third pole' and has the largest freshwater reserves after the North and South poles.

### **Where does India stand with respect to the Arctic?**

- Since 2007, India has an Arctic research programme with as many as 13 expeditions undertaken till date.



- In March 2022, India unveiled its first Arctic policy titled: 'India and the Arctic: building a partnership for sustainable development'.
- **The policy lays down six pillars:** strengthening India's scientific research and cooperation, climate and environmental protection, economic and human development, transportation and connectivity, governance and international cooperation, and national capacity building in the Arctic region.
- India is also one of the 13 Observers in the Arctic Council, the leading intergovernmental forum promoting cooperation in the Arctic.
- The Arctic Council is an intergovernmental body that promotes research and facilitates cooperation among Arctic countries on issues related to the environmental protection and sustainable development of the Arctic region.

#### **What is the Arctic?**

- The Arctic is a polar region located at the northernmost part of Earth.
- Land within the Arctic region has seasonally varying snow and ice cover.
- It consists of the Arctic Ocean, adjacent seas, and parts of Alaska (United States), Canada, Finland, Greenland (Denmark), Iceland, Norway, Russia, and Sweden.

#### **Way Forward:**

- As the earth further heats up, which is more profound at the poles, the race for the Arctic is set to accelerate which makes the Arctic the next geopolitical hotspot with all interests converging on it – environmental, economic, political and military.
- India's Arctic Policy is timely and is likely to provide a direction to India's policy-makers on contours of India's engagement with the region.
- There is a need to promote safe and sustainable resource exploration and development in the arctic region, with efficient multilateral actions taking into account cumulative environmental impacts.



#### **7. FIRSTAP – India's First Sticker-based Debit Card:**

- IDFC First Bank, in association with the National Payments Corporation of India (NPCI), recently launched FIRSTAP- India's first sticker-based debit card.
- It is a sticker-based debit card allows the user to make transactions by simply tapping the sticker on near-field communication (NFC)-enabled point-of sale terminal.
- It can be used to tap and pay in stores, restaurants and other places without the need to carry a debit card.
- The debit card can be stuck on any surface of the customer's choice, like cell phones, identity cards, wallets, tabs, airpod cases etc. It can be stuck on wearable devices like watches and rings as well. It enables transactions up to Rs.5,000 without a PIN and those beyond that requires the entry of PIN. This sticker debit card comes with a

complementary personal accidental cover and 24/7 concierge services. It also includes several RuPay offers.

- The IDFC FIRST Bank was established following the merger of the erstwhile IDFC Bank, promoted by the famous infrastructure financing institution IDFC Limited., and leading technology NBFC, Capital First.

**Page|34 National Payments Corporation of India:**

- **NPCI**, an umbrella organisation for operating retail payments and settlement systems in India, is an initiative of Reserve Bank of India (RBI) and Indian Banks' Association (IBA) under the provisions of the Payment and Settlement Systems Act, 2007.
- It is a "**Not for Profit**" Company under the provisions of Section 25 of Companies Act 1956 (now Section 8 of Companies Act 2013), with an intention to provide infrastructure to the entire Banking system in India for physical as well as electronic payment and settlement systems.

**8. Antimicrobial Resistance Multi-stakeholder Partnership Platform:**

- Recently, an Antimicrobial Resistance (AMR) Multi-stakeholder Partnership Platform (MSPP) was set up to mark the start of World Antimicrobial Awareness Week (WAAW).
- The Antimicrobial Resistance (AMR) Multi-stakeholder Partnership Platform (MSPP) was launched jointly by the UN Food and Agriculture Organization (FAO), UN Environment Programme (UNEP), the World Health Organization (WHO) and the World Organization for Animal Health.

**The purpose of this newly established platform is to:**

- Promote multidimensional action to combat antimicrobial resistance at the international, regional and national levels through action groups and formation of action plans.
- Create global momentum and high-level advocacy to combat antimicrobial resistance.
- Push for a global commitment to use antimicrobials in a responsible and prudent manner to ensure their effective utilization.
- The platform was recommended by the Interagency Coordination Group (IACG) in its 2019 report.
- The IACG recommended coordination between different stakeholders representing human, animal, plant and environmental health as well as agriculture, food and feed production to tackle antimicrobial resistance.

**9. First Drug to Delay Type 1 Diabetes:**

- Recently, the US Food and Drug Administration recently approved Tzielid - the first drug to delay the onset of Type 1 diabetes.
- Type 1 diabetes is a chronic medical condition in which the pancreas produces little to no insulin. It was formerly known as insulin-dependent or juvenile diabetes. While it generally appears in children, teens, and young adults, it is known to occur at any age. It is rarer than the occurrence of type 2 diabetes.
- Preventive measures for this chronic condition are unknown. Symptoms include maintaining blood sugar level through regular monitoring, insulin therapy, diet and exercise.
- Tzielid is a monoclonal antibody injection that is capable of preventing the body's immune system from mistakenly attacking cells in the pancreas that make insulin. It was developed by drugmakers Sanofi and Provention Bio. The common side effects of this drug are decreased levels of certain white blood cells, rashes and headache.

- It can be administered to people aging 8 and older, who have early symptoms of type 1 diabetes. It is capable of delaying the onset of stage 3 type 1 diabetes in adults and in pediatric patients aging 8 years and above who have stage 2 type 1 diabetes.

#### 10. New Name for Monkeypox:

- The World Health Organisation (WHO) announced that it would start using the term “mpox” for monkeypox, which has infected about 80,000 people in the first major outbreak of the viral disease outside Africa that began early this summer.
- The disease spread mainly in the Americas including the United States and Europe, primarily among men who have sex with men (MSM).
- The change of name, announced after a series of consultations with global experts, has been provoked by the racist connotations that “monkeypox” sometimes carries.
- Both names will be used simultaneously for one year while “monkeypox” is phased out, the WHO said.
- When the outbreak of monkeypox expanded earlier this year, racist and stigmatizing language online, in other settings and in some communities was observed and reported to WHO.
- In several meetings, public and private, a number of individuals and countries raised concerns and asked WHO to propose a way forward to change the name.

#### Naming the disease:

- **Human monkeypox** was given its name in 1970 (after the virus that causes the disease was discovered in captive monkeys in 1958), before the publication of WHO best practices in naming diseases, published in 2015.
- According to these best practices, new disease names should be given with the aim to minimize unnecessary negative impact of names on trade, travel, tourism or animal welfare, and avoid causing offence to any cultural, social, national, regional, professional or ethnic groups.
- Assigning new names to new and, very exceptionally, to existing diseases is the responsibility of WHO.

#### Naming of viruses:

- The naming of viruses is the responsibility of the International Committee on the Taxonomy of Viruses (ICTV).
- Prior to the 2022 global monkeypox outbreak, there was already a process underway to reconsider the naming of all orthopoxvirus species, including monkeypox virus. This will continue under ICTV leadership.

#### 11. Artemis I:

- National Aeronautics and Space Administration (NASA) is about to launch its Artemis Program.
- Artemis I is an uncrewed mission of NASA.
- It will test the agency’s Space Launch System (SLS) rocket and Orion crew capsule.
- Artemis I will be the first in a series of increasingly complex missions to build a long-term human presence at the Moon for decades to come.
- The primary goals for Artemis I are to demonstrate Orion’s systems in a spaceflight environment and ensure a safe re-entry, descent, splashdown, and recovery prior to the first flight with crew on Artemis II.

**12. Vikram-S: India's First Privately Developed Rocket:**

- Recently, ISRO Launched Vikram-S Rocket today at Sriharikota. Vikram S Rocket is India's first privately developed rocket from the Indian Space Research Organization (ISRO).
- Vikram-S Rocket, India's first privately developed rocket launched from the Indian Space Research Organization (ISRO) at the Sriharikota launchpad. The launch of Vikram-S Rocket by ISRO is a historic moment.
- The Vikram-S Rocket is developed by Hyderabad-based start-up Skyroot Aerospace Private Limited, and it is a 6-meter tall and hits a peak altitude of 89.5 kilometers. After five minutes of launch, the Vikram-S Rocket splashed into the Bay of Bengal.
- The mission was titled Prarambh.

**13. BHIM App open-source license model:**

- Recently, BHIM App open-source license model was announced by the National Payments Corporation of India (NPCI).
- Under the BHIM App open-source license model, regulated entities in the UPI ecosystem can get license for accessing source code of the BHIM app. New features that will be included in the application in the future can also be accessed by these licensees.
- Currently, many banks do not have their own mobile banking applications. Therefore, they are unable to provide the benefits of UPI to their customer base. The NPCI aims to address this gap by providing readily available features of UPI to these banks via the BHIM App licensing model. It will act as an economic and quick-to-market solution for these entities.
- The BHIM licensing model will empower the banking entities to provide benefits of the UPI to their customer base with a readily-available UPI application. This will minimise time, efforts and costs incurred for promoting the UPI based transactions.

**Unified Payments Interface (UPI):**

- Unified Payments Interface (UPI) is an instant real-time payment system that is used on mobile devices to instantly transfer money between two bank accounts. It was developed by the NPCI. The UPI enabled 45.6 billion transactions during Financial Year 2022.
- It is currently one of the most prominent forms of digital payments in India.
- The NPCI International Payments Ltd (NIPL)-the international arm of the NPCI - announced that the BHIM UPI is live at NEOPAY terminals in the United Arab Emirates. This enables millions of Indians traveling to the UAE to make payments using BHIM UPI. This feat was achieved after NIPL and NEOPAY (payment subsidiary of Mashreq bank) collaborated to create the acceptance infrastructure in the UAE. It allows Indian tourists to make UPI transactions across NEOPAY enabled shops and merchant stores.

**14. Indian Biological Data Center (IBDC):**

- Recently, government has set up 'Indian Biological Data Bank' at the Regional Centre for Biotechnology (RCB), Faridabad.
- Indian Biological Data Bank is better known as 'Indian Biological Data Centre (IBDC)'.

- IBDC is the first national repository for life science data in India, where the data will not only be submitted from across India but can be accessed by researchers from across India
- It is mandated to archive all life science data in IBDC generated from publicly funded research in India.
- The data center is supported by the Department of Biotechnology (DBT).
- It is being established at the RCB in collaboration with the National Informatics Centre (NIC), Bhubaneswar.
- It costs around 85 crore rupees to be set up.

**Key Features:**

- The digitised data will be stored on a four-petabyte supercomputer called 'Brahm'.
- A petabyte equals 10,00,000 gigabytes (gb).
- Different sections of IBDC would typically deal with particular type(s) of life science data.
- Each IBDC section would have dedicated data submission and access schema.
- IBDC has a backup data 'Disaster Recovery' site at NIC.
- Further, IBDC shall also develop highly curated data sets in order to facilitate knowledge discovery in various domains of life sciences.
- It would also provide infrastructure and expertise for biological data analysis.
- It currently accepts nucleotide sequences – the digitised genetic makeup of humans, plants, animals, and microbes.
- There are now 200 billion base pair data in the bio-bank, including 200 human genomes sequenced under the '1,000 Genome Project', which is an international effort to map the genetic variations in people.
- The project will also focus on populations that are predisposed to certain diseases.
- It will also help researchers in studying zoonotic diseases.
- Although the database currently only accepts such genomic sequences, it is likely to expand later to storage of protein sequences and imaging data such as copies of Ultrasound and Magnetic Resonance Imaging (MRI).

**Objectives:**

- Provide IT platform for perpetually archiving biological data in the country.
- Development of standard operating Procedures (SOPs) for storing and sharing the data as per FAIR (Findable, Accessible, Interoperable and Reusable) Principle.
- Perform quality control, curation/annotation of data, data backup and management of data life cycle.
- Development of web-based tools/ Application Programming Interface (API) for data sharing/retrieval.
- Organization of training programs on 'Big' data analysis and benefits of data sharing.

**Data Access:**

- IBDC would have majorly two data access types:
- 1. **Open access/time-release access:** Data submitted at IBDC would be freely accessible across the globe as per international open-access standards. The submitter, however, may choose to restrict the data access for a defined period of time.
- 2. **Restricted access:** The data would not be made accessible freely. It can only be accessed through prior permission through IBDC from the original data submitter.

**Significance:**

1. It will reduce the dependency of Indian researchers on American and European data banks.
2. It will not only provide a platform to researchers to securely store their data within the country, it will also provide access to a large database of indigenous sequences for analyses.
3. Such databases have traditionally played a key role in determining the genetic basis of various diseases and finding targets for vaccines and therapeutics.

## Environment and Ecology

### 1. CITES COP19 Downgrades Status of Southern White Rhinos:

- In a major hurdle to Africa's rhino conservation efforts, CITES COP19 has recently accepted the proposal to downgrade the status of southern white rhinos from Appendix I to Appendix II.
- A proposal by Namibia and Botswana to transfer the southern white rhinos from Appendix I to Appendix II allows the trade of live animals for conservation purposes and hunting trophies only.
- Animals in Appendix II may not necessarily be on the brink of extinction but the trade of such species is regulated to protect their existence.
- This amendment is restricted to the downgrading of live animals only for in situ conservation purposes.
- This decision does not resume the international trade in rhino horn, which was proposed by Eswatini (formerly known as Swaziland).
- However, the downgrading of the classification exposes these vulnerable species to the threats posed by smuggling channels in countries where there are rampant activities of illegal poaching.
- It allows white rhinos to be relocated over long distances from one country to another.

### 2. Illegal Wildlife Trade and Climate Change: Joining the Dots:

- United Nations Office on Drugs and Crime (UNODC) recently released a paper titled "Illegal Wildlife Trade and Climate Change: Joining the dots". It was released at the side event during the COP27 held in Sharm El-Sheikh, Egypt.

### 3. Tamil Nadu's First Biodiversity Heritage Site:

- Recently, the Tamil Nadu Government issued a notification declaring **Arittapatti Biodiversity Heritage site** the first biodiversity heritage site in the State.
- The state government notified 193.215 hectares of area spread across Arittapatti and Meenakshipuram villages in Madurai district as 'Arittapatti Biodiversity Heritage Site'.
- The declaration was made under the Biological Diversity Act, 2002.
- This is the first Biodiversity Heritage Site (BHS) notified in Tamil Nadu.
- Arittapatti village, known for its ecological and historical significance, houses around 250 species of birds including three flagship raptor species.

- Laggar Falcon , Shaheen Falcon, and Bonelli's Eagle – and wildlife such as Indian pangolin, python, and slender loris.
- It is also home to wildlife such as the Indian Pangolin, Slender Loris and pythons.

#### **Chain of seven hillocks:**

- The village Arittapatti consists of a chain of seven barren granite hillocks. The distinctive landscape of rocky hills acts as a watershed and supports 72 lakes, 200 natural spring pools, and three check dams.
- The Anaikondan tank, built during the reign of Pandiyan kings in the 16th century is one among them.

#### **Other structures:**

- The site also features various megalithic structures, Tamil Brahmi inscriptions, Jain Beds, and 2,200-year-old rock-cut temples, lending it historical value.

#### **Biodiversity Heritage Sites:**

- Biodiversity heritage sites are well-defined areas that are unique, ecologically fragile ecosystems with high diversity of wild and domesticated species, presence of rare and threatened species, and keystone species.

#### **Statute:**

- The significance and aims of BHS are outlined in Section 37 of the Biological Diversity Act of 2002.
- As per provision under Section 37(1) of 'Biological Diversity Act, 2002': The State Government may, from time to time in consultation with the local bodies, notify in the Official Gazette, areas of biodiversity importance as under this Act.
- Nallur Tamarind Grove in Bengaluru, Karnataka was the first Biodiversity Heritage Site of India, declared in 2007.
- Creation of BHS may not put any restriction on the prevailing practices and usages of the local communities, other than those voluntarily decided by them.
- The purpose is to enhance the quality of life of the local communities through conservation measures.

#### **4. Loss and Damage Fund:**

- At the recently concluded COP27 summit, delegates from the United Nations agreed to create a 'Loss and Damages' fund which will compensate the most vulnerable countries for their losses due to climate-related disasters.
- 'Loss and Damage' refers to impacts of climate change that cannot be avoided either by mitigation (cutting greenhouse gas emissions) or adaptation (modifying practices to buffer against climate change impacts).
- They also include not only economic damage to property but also loss of livelihoods, and the destruction of biodiversity and sites that have cultural importance.
- This broadens the scope for affected nations to claim compensation.

#### **What are the Concerns regarding the Establishment of the Fund?**

- As far as future COP negotiations are concerned, it only commits to creating a fund and leaves it up to discussion how it will be set up and, most importantly, who will contribute to it.
- While there have been nominal commitments by certain countries to donate to such a fund, the estimated L&D is already over USD 500 billion.

- During negotiations in COP27, the European Union pressed hard for China, the Arab states and “large, developing countries” (probably even India) to contribute on the grounds that they were large emitters.
- There is no agreement yet on what counts as "loss and damage" caused by climate change - which could include infrastructure damage, property damage, and cultural assets whose value is hard to quantify.
- Climate funding so far has focused mostly on cutting carbon dioxide emissions in an effort to curb global warming, while about a third of it has gone toward projects to help communities adapt to future impacts.

#### **National Adaptation Fund for Climate Change (NAFCC):**

- It was established in 2015 to meet the cost of adaptation to climate change for the State and Union Territories of India that are particularly vulnerable to the adverse effects of climate change.
- National Clean Energy Fund:
- The Fund was created to promote clean energy, and funded through an initial carbon tax on the use of coal by industries.
- It is governed by an Inter-Ministerial Group with the Finance Secretary as the Chairman.
- Its mandate is to fund research and development of innovative clean energy technology in the fossil and non-fossil fuel-based sectors.
- National Adaptation Fund:
- The fund was established in 2014 with a corpus of Rs. 100 crores with the aim of bridging the gap between the need and the available funds.
- The fund is operated under the Ministry of Environment, Forests, and Climate Change (MoEF&CC).

#### **5. World Wildlife Trade Report:**

- The first-ever World Wildlife Trade Report was released at the 19th Conference of Parties to CITES in Panama this year.
- This conference is the fourth such meeting to be held in Central and South America and the Caribbean since the CITES came into force in 1975. It is the first COP to CITES to be held in the region since 2002.
- The World Wildlife Trade Report provides insights and assessment of the global trade of animals and plants that are regulated by CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). The CITES ensures the regulation of the international trade of wild animals and plants so that their survival is not threatened.

#### **6. Global Shield Against Climate Risks Initiative:**

- The Global Shield Against Climate Risks has been launched at COP27 in Egypt.
- **Launched by:** It is a joint initiative of G7 and V20
- Note: Vulnerable Twenty(V20) is a dedicated cooperation initiative of countries systemically vulnerable to climate change. It was established in 2015 in Lima, Peru.
- **Purpose:** The initiative will provide pre-arranged financial support designed to be quickly deployed during climate disasters.
- The initiative is envisioned as a social protection and insurance-based finance mechanism for loss and damage outside the UNFCCC process.



- **Funding:** World Bank Group has announced a Global Shield Financing Facility to support the Global Shield Against Climate Risks.
- **Significance:** The Global Shield is touted to expand financial protection instruments for governments, communities, businesses and households.
- Such instruments can lessen the impact of disasters by making vulnerable economies resilient, safeguarding sustainable development and protecting lives and livelihoods.

#### 7. Methane Alert and Response System:

- Recently the United Nations (UN) has decided to set up a satellite-based monitoring system “MARS: Methane Alert and Response System” for tracking methane emissions and alerting governments and corporations to respond.
- The MARS initiative is intended to strengthen the efforts to cut methane emissions.
- The MARS was launched at the 27th Conference of Parties (COP27) to the United Nations Framework Convention on Climate Change in Sharm El-Sheikh, Egypt.
- The data-to-action platform was set up as part of the UN Environment Programme’s (UNEP) International Methane Emissions Observatory (IMEO) strategy to get policy-relevant data into the right hands for emissions mitigation.
- The system will be the first publicly available global system to connect methane detection to notification processes transparently.

#### Objectives:

- MARS will integrate data from a large number of existing and future satellites that have the ability to detect methane emission events anywhere in the world, and send out notifications to the relevant stakeholders to act on it.
- MARS will track the large point emission sources, mainly in the fossil fuel industry, but with time, would be able to detect emissions from coal, waste, livestock and rice fields as well.

#### About Methane:

- Methane is a colourless and odourless gas that occurs abundantly in nature and as a product of certain human activities.
- Methane is the simplest member of the paraffin series of hydrocarbons and is among the most potent of the greenhouse gases.

#### Concerns Regarding Methane:

- Methane is the second-most common of the six major greenhouse gases, but is far more dangerous than carbon dioxide in its potential to cause global warming.
- Accounting for about 17% of the current global greenhouse gas emissions, methane is blamed for having caused at least 25%- 30% of temperature rise since the pre-industrial times.
- It accounts for a small portion of human-induced greenhouse gas emissions compared to carbon dioxide. But it is thought to be 80 times more efficient than carbon dioxide at trapping atmospheric heat in the 20 years following its release.

#### What are the Initiatives to Cut Methane Emission?

##### Global:

##### **Global Methane Pledge:**

- At the Glasgow climate conference (UNFCCC COP 26) in 2021, nearly 100 countries had come together in a voluntary pledge, referred to as the Global Methane Pledge, to cut methane emissions by at least 30% by 2030 from the 2020 levels.

- More countries have joined in this initiative since then, bringing the total to nearly 130.
- A 30% reduction in methane emissions by 2030 is expected to result in avoiding 0.2 degree rise in temperature by the year 2050, and is considered absolutely essential in the global efforts to keep the temperature increase below the 1.5 degree Celsius target.

#### **Global Methane Initiative (GMI):**

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- It is an international public-private partnership focused on reducing barriers to the recovery and use of methane as a clean energy source.
- GMI provides technical support to deploy methane-to-energy projects around the world that enable Partner Countries to launch methane recovery and use projects.
- India is a partner country.

#### **National:**

##### **'Harit Dhara' (HD):**

- Indian Council of Agricultural Research (ICAR) has developed an anti-methanogenic feed supplement 'Harit Dhara', which can cut down cattle methane emissions by 17-20% and can also result in higher milk production.

##### **India Greenhouse Gas Program:**

- The India GHG Program led by World Resources Institute (WRI) India (non-profit organization), Confederation of Indian Industry (CII) and The Energy and Resources Institute (TERI) is an industry-led voluntary framework to measure and manage greenhouse gas emissions.
- The programme builds comprehensive measurement and management strategies to reduce emissions and drive more profitable, competitive and sustainable businesses and organisations in India.

##### **National Action Plan on Climate Change (NAPCC):**

- NAPCC was launched in 2008 which aims at creating awareness among the representatives of the public, different agencies of the government, scientists, industry and the communities on the threat posed by climate change and the steps to counter it.

#### **8. E-Waste (Management) Rules, 2022:**

- The government recently notified E-waste (management) rules 2022 that will come into force from 1 April 2023.

#### **Major Highlights of E-waste (management) rules 2022:**

##### **Application:**

- It will apply to every manufacturer, producer, refurbisher, dismantler and recycler involved in manufacturing, sale, transfer, purchase, refurbishing, dismantling, recycling and processing of e-waste or electrical and electronic equipment.
- The rule is applicable to all electrical devices and radiotherapy equipment, nuclear medicine equipment and accessories, Magnetic Resonance Imaging (MRI), electric toys, air conditioners, microwaves, tablets, washing machine, refrigerator and iPad among others.

##### **Restrictions:**

- The government has restricted the use of hazardous substances in manufacturing electrical and electronic equipment (EEE) following deaths due to exposure to radioactive material.
- It mandates the reduction of the use of lead, mercury, cadmium among others in the manufacturing of electronic equipment.

##### **Reuse and recycling:**

- Manufacturers shall use the technology or methods so as to make the end product recyclable and shall ensure that components or parts made by different manufacturers are compatible with each other so as to reduce the quantity of e-waste.

#### Strict monitoring:

- The Central Pollution Control Board shall conduct random sampling of electrical and electronic equipment placed on the market to monitor and verify the compliance of reduction of hazardous substances provisions.
- If a product does not comply with the e-waste management rules, the manufacturer will have to withdraw all samples from the market.

#### Extended Producer Responsibility Certificates:

- Draft rules aim to incentivise registered electronic waste recyclers by introducing EPR or Extended Producer Responsibility certificates (which was not part of 2016 Rules).

#### E-waste exchange facilities:

- The EPR requires producers to set up e-waste exchange facilities to facilitate collection and recycling, and assign specific responsibility to bulk consumers of electronic products for safe disposal.

#### Imports:

- Imports or placement in the market for new electrical and electronic equipment shall be permitted only for those which are compliant with provisions laid down by the government.

#### Disposal:

- It is the responsibility of the manufacturer to collect e-waste generated during manufacture and to ensure its recycling or disposal.
- However, the rule does not apply to waste batteries, packaging plastics, micro enterprises and radio-active waste, as covered under the provisions of the law.
- Major Issues related to E-waste in India

#### Health issues:

- The metal in e-waste includes mercury, lead, cadmium, polybrominated flame retardants, barium and lithium, all of which are hazardous to human health.
- Toxins' harmful health impact on humans includes damage to the brain, heart, liver, kidneys and skeletal system.

#### Global ecosystem:

- Improper e-waste disposal is highly hazardous to the global ecosystem.
- Volume of E-waste generated: India stands fifth in e-waste generation producing around 1.7 lakhs metric tonnes per annum.

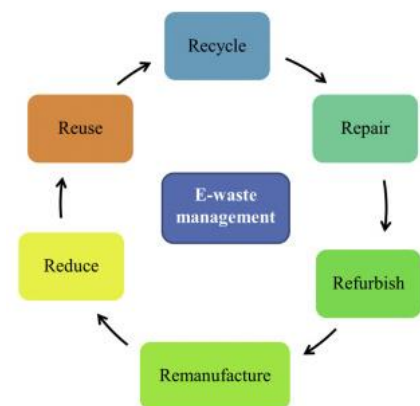
#### Involvement of Child Labor:

- In India, about 4.5 lakh child laborers in the age group of 10-14 are observed to be engaged in various E-waste activities and that too without adequate protection and safeguards in various yards and recycling workshops.

#### Ineffective Legislation:

- There is absence of any public information on most SPCBs/PCC websites. Even the basic E-waste Rules and guidelines have not been uploaded.

#### Lack of infrastructure:



- There is a huge gap between present recycling and collection facilities and the quantum of E-waste that is being generated.

**Lack of incentive schemes:**

- No clear guidelines are there for the unorganized sector to handle E-waste. Also no incentives are mentioned to lure people engaged to adopt a formal path for handling E-waste.

**E-waste imports:**

- 80 percent of E-waste in developed countries meant for recycling is sent to developing countries such as India, China, Ghana and Nigeria.

**9. Link of PM 2.5 Pollutants to Anaemia Prevalence:**

- A new study titled “Reducing the burden of anaemia in Indian women of reproductive age with clean-air targets” has found a link between the PM 2.5 pollutants and the prevalence of anaemia. It was conducted by researchers from institutions and organizations in India, the US and China.

**What are the key findings of the study?**

- According to the new study, PM 2.5 sources – sulphate and black carbon – are more associated with anaemia than organics and dust.
- The largest sectoral contributor of these PM 2.5 sources is industry. It is followed by unorganised sector, domestic sources, power sector, road dust, agricultural waste burning and transport sector.
- Long-term exposure to the particulate matter can increase the prevalence of anaemia among women of reproductive age (15-45 years) via systemic inflammation.
- If India meets its clean air targets, it can reduce the prevalence of anaemia from 53 per cent to 39.5 per cent. India is currently one of the countries having the highest prevalence of anaemia among women of reproductive age.
- According to the study, for every 10 microgram/cubic meter of air increase in ambient PM 2.5 exposure, the average anaemia prevalence among women of reproductive age increases by 7.23 per cent.
- The findings of the study suggest that the clean energy transition can accelerate India’s progress towards achieving the ‘anaemia-free’ mission target.

**About anaemia’s prevalence:**

- Anaemia is a condition that is characterized by the lack of healthy blood cells required for carrying adequate oxygen to tissues. It is often accompanied by a disease in red blood cells and depleted blood haemoglobin concentration. It is among the major contributors to the global disease burden.
- Women of reproductive age may suffer from regular iron deficiency due to the menstruation. Therefore, they are especially vulnerable to mild to severe anaemia. Dietary iron deficiency is another top contributor of anaemia. Other factors that contribute to its prevalence are genetic disorders, parasitic infections and inflammation from infections and chronic diseases. The WHO has set the target of halving anaemia among women of reproductive age by 2053.
- In India, anaemia is highly prevalent. According to the National Family and Health Survey 2015–2016 (NFHS-4), 53.1 per cent of women of reproductive age and 58.5 per cent of children under 5 years are anaemic.

#### 10. Middle East Green Initiative:

- Saudi Arabia recently committed 2.5 billion USD to the Middle East Green Initiative.
- The Middle East Green Initiative aims to reduce carbon emissions from regional hydrocarbon production by more than 60%.
- It also plans to plant 50 billion trees across the Middle East and restore an area equivalent to 200 million hectares of degraded land.
- The initiative will help reduce global carbon levels by 2.5%.
- The first Middle East Green Initiative (MGI) Summit was hosted by HRH Mohammed bin Salman, Crown Prince and Prime Minister in Riyadh on 25 October 2021.
- It facilitated a first-of-its-kind regional dialogue on climate, with leaders in attendance from 28 countries agreeing to work together to tackle climate change.
- Saudi Arabia plans to rely on renewables for 50% of its electricity generation by 2030, removing 44 million tonnes of carbon emissions by 2035.

#### 11. Infrastructure Resilience Accelerator Fund:

- The Coalition for Disaster Resilient Infrastructure (CDRI) recently announced setting up the Infrastructure Resilience Accelerator Fund (IRAF).
- Allocation of \$50 million to support global action to build robust infrastructure, especially in developing countries and small island developing nations, that can withstand the impacts of climate change.
- It will be a multi-donor trust fund, managed by UN Multi-Partner Trust Fund Office, New York.
- Supported by India, the UK, Australia and the EU
- IRAF's multi-pronged programme will offer customised technical assistance, capacity building, research, knowledge management, and advocacy across the infrastructure life cycle for countries at all stages of development.
- One of the first initiatives to be supported by the IRAF is the Infrastructure for the Resilient Island States (IRIS).

#### Coalition for Disaster Resilient Infrastructure (CDRI):

- CDRI was launched by the Prime Minister of India, Narendra Modi at the UN Climate Action Summit in New York in 2019.
- It is a partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions.
- It aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development.
- CDRI promotes rapid development of resilient infrastructure to respond to the Sustainable Development Goals' imperatives of expanding universal access to basic services, enabling prosperity and decent work.

#### 12. India's First Sovereign Green Bonds Framework:

- Recently, the Union Minister for Finance & Corporate Affairs has approved the final Sovereign Green Bonds Framework of India.
- Sovereign Green Bonds will be issued for mobilising resources for green projects.

#### What is Sovereign Green Bonds Framework?

- The Framework comes close on the footsteps of India's commitments under "Panchamrit" as elucidated by the Prime Minister at Conference of Parties (COP) 26 at Glasgow in November 2021.
- It will further strengthen India's commitment towards its Nationally Determined Contribution (NDCs) targets, adopted under the Paris Agreement.
- **Green Finance Working Committee (GFWC)** was constituted to validate key decisions on issuance of Sovereign Green Bonds.
- The framework has been rated 'Medium Green', with a "Good" governance score by a Norway-based independent second opinion provider CICERO.
- The 'Medium Green' rating is assigned 'to projects and solutions that represent significant steps towards the long-term vision, but are not quite there yet.
- All fossil fuel-related projects have been kept out of the framework, along with biomass-based renewable energy projects that rely on feedstock from 'protected areas'.

### **What are Sovereign Green Bonds?**

#### **About:**

- Green bonds are issued by companies, countries and multilateral organisations to exclusively fund projects that have positive environmental or climate benefits and provide investors with fixed income payments.
- The projects can include renewable energy, clean transportation and green buildings, among others.
- Proceeds from these bonds are earmarked for green projects. This is unlike standard bonds, the proceeds of which can be utilized for various purposes at the discretion of the issuer.
- By the end of 2020, 24 national governments had issued Sovereign Green, Social and Sustainability bonds totalling a cumulative USD 111 billion dollars, according to the London-based Climate Bonds Initiative.

#### **Benefits of Sovereign Green Bonds:**

- Sovereign green issuance sends a powerful signal of intent around climate action and sustainable development to governments and regulators.
- With the International Energy Agency's (IEA) World Energy Outlook 2021, estimating that 70% of the additional USD 4 trillion spending to reach net-zero is required in emerging/developing economies, sovereign issuance can help kickstart these large inflows of capital.
- Development of a sovereign green benchmark could eventually lead to the creation of a vibrant ecosystem of raising green bonds from international investors.

#### **Status:**

##### **Global Status:**

- The Environmental, Social and Governance (ESG) funds are estimated at USD 40 trillion with Europe accounting for about half this.
- It is estimated that by 2025, ESG assets will account for about one-third of the total global assets under management.
- The ESG debt funds pie is around USD 2 trillion, of which over 80% is "environmental" or green bonds, and the rest social and sustainability bonds.

##### **National Status:**

- According to the Climate Bonds Initiative, an international organization working to mobilize global capital for climate action, Indian entities have issued green bonds for over USD 18 billion.
- What are Other Measures on Climate Action announced in the Budget?
- The budget included several measures on climate action such as:
- Battery swapping policy.
- Additional allocation under the Performance Linked Incentive (PLI) scheme for manufacturing high efficiency solar modules.
- The government is introducing a new bill that aims to provide a regulatory framework for Carbon Trading in India to encourage penetration of renewables in the energy mix.

### 13. COP27: WMO unveils USD 3.1 billion action plan:

- The World Meteorological Organization (WMO) recently released the Executive Action Plan of Early Warnings for All.
- The Executive Action Plan of Early Warnings for All was released by during a roundtable meeting at the 27th Conference of Parties (COP27) to the United Nations Framework Convention on Climate Change.
- It aims to develop a global early warning system for extreme weather events that have been intensified because of climate change.
- The plan proposes the initial investment of around 3.1 billion USD for delivering early warning systems for all. This investment is equal to around 50 cents (around Rs.40) for each person per annum.
- The initial investment will be diverted to four pillars of early warning system:
  - ✓ Disaster risk knowledge
  - ✓ Observations and forecasting
  - ✓ Preparedness and response
  - ✓ Communication of early warnings
- The disaster risk knowledge involves systematically collecting data and undertaking risk assessment on hazards and vulnerabilities. It requires an investment of 374 million USD.
- Developing hazard monitoring and early warning services require 1.18 billion USD.
- The pillars - observations and forecasting and preparedness and response - require a funding of 1 billion USD to strengthen national and community response capabilities.
- The final pillar of early warning system - dissemination and communication of risk information - needs 550 million USD.
- The initial investment represents only 6 per cent of the 50 billion USD requested for adaptation funding.
- Importance of Early Warning Systems
- Early warning systems are still not accessible to 33 per cent of the global population, especially in least developed countries and small island developing states. Over 60 per cent of the population in Africa do not have access to these systems.
- Early warning systems play a major role in reducing causality count during disasters and minimising economic damages caused by them. Just 24 hours' notice of an impending disaster event can minimise damage by 30 per cent. Providing investment of

800 million USD to set up these systems in developing countries can cut down losses by 3 billion to 16 billion USD each year.

#### **14. Self Reliant India (SRI) Fund:**

- The Indian Government's Self Reliant India (SRI) Fund committed Rs.5,000 crore in a year.
- Self Reliant India (SRI) Fund is Rs.10,000 crore fund launched by the Indian Government.
- It is a SEBI-registered category-II Alternative Investment Fund (AIF) that was launched by the Indian Government to provide growth capital to MSME Sector.
- It operates via the mother-fund and daughter-fund (Fund of Funds) structure. The mother fund is the SEBI fund that invests up to 20 per cent of the overall corpus. The daughter fund (mostly venture capital and private equity funds) raises the rest 80 per cent of the capital from the outside sources.
- The investment by this fund will get leveraged fivefold, making the total value of the investment capital to MSMEs to Rs.50,000 crore.
- The TATA Capital Healthcare Fund, Aavishkaar India Fund, SVL-SME Fund, Gaja Capital India Fund, Avaana Sustainability Fund, ICICI Ventures's India Advantage Fund S5 I, Omnivore Agritech and Climate Sustainability Fund 3, Fireside Ventures Investment Fund III, Nab Ventures Fund 1, Maharashtra Defence and Aerospace Venture Fund etc., are the daughter funds empanelled with the SRI fund.

#### **Usage of the Fund:**

- In a year since the launch of the fund, more than Rs.2,300 crore has been deployed by daughter funds in more than 125 MSMEs across sectors like agriculture, defence, education, pharma, climate and industrials About 50 per cent of the SRI fund has been committed from the total corpus of Rs.10,000 crore in 38 private equity and venture capital firms.
- Each fund will get an average of Rs.100 to Rs.150 crore. It will be deployed in a phased and choice-based manner since the PE funds have an investment period of 5 to 6 years. The government is currently planning to invest an additional funding of Rs.1,000 to Rs.1,200 crore in the next 12 months.

#### **15. Mangrove Alliance for Climate (MAC):**

- During the COP27 climate summit in Sharm El Sheikh, Egypt, the UAE and Indonesia announced the "Mangrove Alliance for Climate."
- It includes UAE, Indonesia, India, Sri Lanka, Australia, Japan, and Spain.
- It seeks to educate and spread awareness worldwide on the role of mangroves in curbing global warming and its potential as a solution for climate change.
- However, the intergovernmental alliance works on a voluntary basis which means that there are no real checks and balances to hold members accountable.
- Instead, the parties will decide their own commitments and deadlines regarding planting and restoring mangroves.
- The members will also share expertise and support each other in researching, managing and protecting coastal areas.

#### **What are Mangroves?**

**About:**



- Mangroves are defined as assemblages of salt tolerant trees and shrubs that grow in the intertidal regions of the tropical and subtropical coastlines.
- They grow luxuriantly in the places where freshwater mixes with seawater and where sediment is composed of accumulated deposits of mud.

#### Features:

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- **Saline Environment:** They can survive under extreme hostile environments such as high salt and low oxygen conditions.
- **Low oxygen:** Underground tissue of any plant needs oxygen for respiration. But in a mangrove environment, the oxygen in soil is limited or nil.
- For the purpose of breathing, they develop special roots called pneumatophores.
- **Survival in Extreme Conditions:** With their roots submerged in water, mangrove trees thrive in hot, muddy, salty conditions that would quickly kill most plants.
- **Viviparous:** Their seeds germinate while still attached to the parent tree. Once germinated, the seedling grows into a propagule.
- A propagule is a vegetative structure that can become detached from a plant and give rise to a new plant. Examples include a bud, sucker, or spore.

#### Significance:

- Mangroves trap and cycle various organic materials, chemical elements, and important nutrients in the coastal ecosystem.
- They provide one of the basic food chain resources for marine organisms.
- They provide physical habitat and nursery grounds for a wide variety of marine organisms, many of which have important recreational or commercial value.
- Mangroves also serve as storm buffers by reducing wind and wave action in shallow shoreline areas.

#### Area Covered:

##### Global Mangrove Cover:

- The total mangrove cover in the world is one 1,50,000 sq kms.
- Asia has the largest number of mangroves worldwide.
- South Asia comprises 6.8% of the world's mangrove cover.

##### Indian Mangrove Cover:

- India's contribution is 45.8% total mangrove cover in South Asia.
- According to the Indian State Forest Report 2021, Mangrove cover in India is 4992 sq. Km which is 0.15% of the country's total geographical area.
- **Largest Mangrove Forest:** Sundarbans in West Bengal are the largest mangrove forest regions in the world. It is listed as a UNESCO World Heritage Site.
- It is followed by Gujarat and Andaman, and Nicobar Islands.

#### What are the Challenges with Mangrove Conservation?

##### Commercialisation of Coastal Areas:

- Aquaculture, coastal development, rice and palm oil farming and industrial activities are rapidly replacing these salt-tolerant trees and the ecosystems they support.

##### Shrimp Farms:

- The emergence of shrimp farms have caused at least 35% of the overall loss of mangrove forests.
- The rise of shrimp farming is a response to the increasing appetite for shrimp in the United States, Europe, Japan and China in recent decades.

##### Temperature Related Issues:

- A fluctuation of ten degrees in a short period of time is enough stress to damage the plant and freezing temperatures for even a few hours can kill some mangrove species.

**Soil Related Issues:**

- The soil where mangroves are rooted poses a challenge for plants as it is severely lacking in oxygen.
- Excessive Human Intervention:
  - ✓ During past changes in sea level, mangroves were able to move further inland, but in many places human development is now a barrier that limits how far a mangrove forest can migrate.
  - ✓ Mangroves also frequently suffer from oil spills.

**16. Pseudohelice annamalai:**

- Recently, researchers have discovered a new species of Estuarine Crab at the Mangroves of Parangipettai near the Vellar River estuary (an area where river meets the ocean) in Cuddalore district, Tamil Nadu.
- The species has been named 'Pseudohelice Annamalai' in recognition of Annamalai University's 100 years of service in education and research.
- What are the Key Facts about Pseudohelice Annamalai?
- This is the first ever record of this genus, Pseudohelice, collected from high intertidal areas in front of the Centre of Advanced Study (CAS).
- Till date, only two species, namely "Pseudohelice Subquadrata" and "Pseudohelice Latreilli" have been confirmed within this genus.
- The species discovered is distributed around the Indian subcontinent and the eastern Indian Ocean.



**Features:**

- Pseudohelice annamalai is distinguished by dark purple to dark grey colouring, with irregular light brown, yellowish brown, or white patches on the posterior carapace with light brown chelipeds.
- The new species is small and has a maximum width of up to 20 mm.
- This species is not aggressive and can move fast like other intertidal crabs.

**Habitat:**

- The species inhabits muddy banks of mangroves, and the burrows were located near the pneumatophores of Avicennia mangroves.
- Burrows have a depth of 25-30 cm and are branched, with larger pellets around the entrance.

**Significance:**

- The occurrence of Pseudohelice in India links the distribution gap between the western Indian Ocean and the western Pacific Ocean.
- The new species provides additional evidence of the geographic isolation of the eastern Indian Ocean for some marine organisms.

### 17. Nagaland: Tokhü Emong Bird Count (TEBC):

- Nagaland is undertaking four-day Tokhu Emong Bird Count (TEBC), the first avian documentation exercise to go beyond Amur falcons.
- The exercise has been timed with the post-harvest Tokhu Emong festival of the Lothas, the Naga community that dominates Wokha district of Nagaland.



#### What is Tokhu Emong Festival?

- A perfect blend of religion, culture and entertainment, 'Tokhu Emong' is widely celebrated in Wokha district.
- Celebrated on 7th November every year, this color-filled festival stretches over to 9 days.
- 'Tokhu' means moving from house to house, collecting tokens and gifts in form of natural resources and food. However, the meaning of 'Emong' is to put a halt for the appointed time.
- Significant attraction of this festival includes community songs, dances, feast, fun and frolic.
- Through the commencement of this festival, people relive the stories of their ancestors composed decades before.
- During the festival, gracious offerings are made to the 'Sky God' and 'Earth God' seeking for blessings.

#### What are Amur Falcons?

- Amur falcons, the world's longest travelling raptors start travelling with the onset of winters.
- The raptors breed in southeastern Siberia and northern China, and migrate in millions across India and then over the Indian Ocean to southern Africa before returning to Mongolia and Siberia.
- Their 22,000-kilometre migratory route is one of the longest amongst all avian species.
- They get their name from the Amur River that forms the border between Russia and China.
- Doyang Lake in Wokha, Nagaland is better known as a stopover for the Amur falcons during their annual migration from their breeding grounds to warmer South Africa.
- Thus, Nagaland (Pangti Village) is also known as the "Falcon Capital of the World".
- The birds are the least concern under the International Union for Conservation of Nature (IUCN) Red List, but the species is protected under the Indian Wildlife Protection Act, 1972, and the Convention on Migratory Species, to which India is a signatory (which means it is mandatory to protect the birds).

### 18. Indian Black Honeybee:

- A new species of endemic honeybee has been discovered in the Western Ghats. The finding has been published in the September issue of Entomon, a peer-reviewed journal brought out by the Association for Advancement of Entomology.

**About:**

- The new species has been named *Apis karinjodian* and given the common name Indian black honeybee.
- It is after a gap of more than 200 years that a new species of honeybee has been spotted in the Western Ghats.
- The last honeybee described from India was *Apis indica* in 1798 by Fabricius. Although Fabricius named the Indian bee *Apis indica*, it was not considered a valid species till now.
- The research team restored the status of *Apis indica* based on a new measure for species discrimination in honeybees termed 'Radio-Medial Index (RMI)'.
- While proving the distinct identity of *Apis indica*, led to the discovery of *Apis karinjodian*.
- *Apis karinjodian* has evolved from *Apis cerana* morphotypes that got acclimatised to the hot and humid environment of the Western Ghats.
- The distribution of *Apis karinjodian* ranges from the central Western Ghats and Nilgiris to the southern Western Ghats, covering the States of Goa, Karnataka, Kerala and Tamil Nadu.

**19. UNEP Adaptation Gap Report 2022:**

- According to the United Nations Environment Programme's (UNEP) Adaptation Gap Report, 2022, global efforts in adaptation planning, financing and implementation are not enough to prepare vulnerable communities around the world to adapt to the rising risks from the impacts of climate change.
- The report found some progress on adaptation plans from national governments, but they are not backed by finance.

**Key Findings:**

- A third of the 197 parties to the United Nations Framework Convention on Climate Change (UNFCCC) have incorporated quantified and time-bound targets on adaptation. And 90% of them have considered gender and disadvantaged groups.
- International adaptation finance flows are 5-10 times lower than required and this gap continues to grow. Finance for adaptation increased to USD 29 billion in 2020, a 4% increase over 2019.
- This is when developing countries' estimated annual adaptation needs are USD 160-USD 340 billion by 2030 and USD 315-USD 565 billion by 2050.

## Polity & Governance

**1. SC on Short Tenures of CECs:**

- In a statement came by the Constitution Bench of the Supreme Court, the short tenure of the Chief Election Commissioner (CEC) is hindering the 'independence of the office'.

### The Issue in Details:

- It has been observed over several years that the tenure of the office of CEC remained to be too short. In the year 2014 to 2022, there has been eight CECs been appointed.
- This has drawn arguments against the Centre's policy to appoint a person in the office whose tenure remains short by default.
- This disturbs the working and efficiency of the Election Commission. Hence, the bench has seen issues with the appointment of CECs.

### The Election Commission of India (ECI):

- The Election Commission of India (ECI) is an autonomous constitutional authority responsible for administering Union and State election processes in India.
- The body administers elections to the Lok Sabha, Rajya Sabha, and State Legislative Assemblies in India, and the offices of the President and Vice President in the country.
- It is not concerned with the elections to panchayats and municipalities in the states. For this, the Constitution of India provides for a separate State Election Commission.

### 2. Data on Sale of Electoral Bonds:

- Mumbai sold the highest number an electoral bonds since the scheme was launched five years ago.

#### Electoral Bonds:

- Electoral bonds are money instruments like promissory notes, which can be bought by companies and individuals in India from the State Bank of India (SBI) and donated to a political party, which can then encash these bonds.
- The bonds are only redeemable in the designated account of a registered political party.
- A person being an individual can buy bonds, either singly or jointly with other individuals.
- Electoral Bond Scheme:
- Electoral Bonds Scheme was launched in 2018 to to cleanse the political funding in India.
- The central idea behind the electoral bonds scheme is to bring about transparency in electoral funding in India.
- The government had described the scheme as an "electoral reform" in a country moving towards a "cashless-digital economy".

### The lowdown on a vexed issue

#### What are electoral bonds?

Sold four times a year (in January, April, July and October), electoral bonds allow political parties to accept money from donors whose identities are kept anonymous. They are sold in multiples of ₹1,000, ₹10,000, ₹1 lakh, ₹10 lakh, and ₹1 crore. The scheme was first floated in 2017 and implemented in 2018

#### Who can sell them?

SBI is the sole authorised bank to sell and redeem the bonds. Customers of other banks can also purchase the bonds via different payment channels provided to them. However, a political party can only redeem the bond from one of the 29 authorized branches of the bank.

#### Which parties can receive donations via electoral bonds?

A political party must also have at least 1% vote share in most recent general elections or assembly elections to receive donations via electoral bonds.

### 3. Home Ministry on Right to Freedom of Religion:

- Recently, the Ministry of Home Affairs told the Supreme Court that Right to Religion does not include Right to Convert, which brought the issue into discussion.
- Background

- The right to religion does not include the right to convert other people to a particular religion, especially through fraud, deception, coercion, allurement and other means.
- The Right to Freedom of Religion is guaranteed to all Indians by the Constitution under **Articles 25 to 28**.
- The Ministry said the word 'propagate' in Article 25 (right to freedom of religion) does not include the right to convert.
- It is rather in the nature of a positive right to spread one's religion by exposition of its tenets.
- The government said, "Fraudulent or induced conversion impinged upon the right to freedom of conscience of an individual apart from hampering public order and, therefore, the state is well within its power to regulate/restrict it".
- The Centre said that the statutes enacted in the past to curb "the menace of organized, sophisticated large-scale illegal conversion" was upheld by the Supreme Court.

#### **Constitutional Provisions:**

- **Article 25** says that all persons are equally entitled to freedom of conscience and the right to freely profess, practice and propagate religion.
- These freedoms are subject to public order, health, and morality.
- The State can make laws that regulate and restrict any financial, economic, political, or other secular activity associated with any religious practice.
- **Article 26** provides that every religious denomination has the right to
  - Form and maintain institutions for religious and charitable intents.
  - Manage its own affairs in the matter of religion.
  - Acquire the immovable and movable property.
  - Administer such property according to the law.
- The rights under article 26 are subjected to morality, health, and public order.
- **Article 27** says that there could be no taxes, the proceeds of which are directly used for the promotion and/or maintenance of any particular religion/religious denomination.
- **Article 28** permits educational institutions that are maintained by religious groups to disseminate religious instruction.

#### **Observation of the apex court:**

- The Supreme Court observed that fraudulent religious conversions "ultimately affect the security of the nation and freedom of religion and conscience of citizens".
- It had asked the Centre to "step in" and clarify in an affidavit what it intended to do to curb compulsory or deceitful religious conversions.
- The bench said that there may be freedom of religion but there may not be freedom of religion by forced conversion. This is a very serious issue.
- Everybody has the right to choose their religion, but not by forced conversion or by giving temptation.

#### **Way Forward:**

- Right to freedom of religion as enshrined in our constitution comes with reasonable restrictions such as Morality, Public Order and Health.
- Thus, the State as a guardian of its citizens has the power to facilitate as well as regulate the religious practices except the essential religious practices.
- Awareness and training should be extended to enforcement agencies to avoid possible misuse and unlawful targeting of citizens.

#### 4. Draft Prevention of Cruelty to Animals (Amendment) Bill, 2022:

- Recently, the Government has introduced the draft Prevention of Cruelty to Animal (Amendment) Bill-2022 to amend the six-decade-old law Prevention of Cruelty to Animal Act, 1960.
- The draft has been prepared by the Ministry of Fisheries, Animal Husbandry and Dairying.

##### **Bestiality as a Crime:**

- The draft includes 'bestiality' as a crime under the new category of 'gruesome cruelty'.
- "Bestiality" means any kind of sexual activity or intercourse between human being and animal.
- Gruesome cruelty has been defined as "an act that leads to extreme pain and suffering to the animals which may cause lifelong disability or death".

##### **Punishment for Gruesome Cruelty:**

- A minimum fine of Rs 50,000 may be imposed and may be increased to Rs 75,000 by a judicial magistrate in consultation with the jurisdictional veterinarians, or the cost may be determined by the judicial magistrate whichever is more, or a maximum fine of one year that may be extended to three years.

##### **Punishment for killing an Animal:**

- A maximum 5-year imprisonment, along with a fine.

##### **Freedoms to Animals:**

- The draft also proposes insertion of a new Section 3A, which provides 'five freedoms' to animals.
- It shall be the duty of every person having charge of an animal to ensure that the animal in his care or under his charge has:
  - ✓ Freedom from thirst, hunger and malnutrition
  - ✓ Freedom from discomfort due to environment
  - ✓ Freedom from pain, injury and diseases
  - ✓ Freedom to express normal behaviour for the species
  - ✓ Freedom from fear and distress

##### **Community Animals:**

- In the case of community animals, the local government shall be responsible for their care.
- The draft proposals introduce the community animal as "any animal born in a community for which no ownership has been claimed excluding wild animals as defined under the Wildlife Protection Act, 1972.
- What does the Prevention of Cruelty to Animals Act, 1960 say?

##### **About:**

- It discusses different forms of cruelty, exceptions, and killing of a suffering animal in case any cruelty has been committed against it, so as to relieve it from further suffering.
- The legislative intent of the Act is to "prevent the infliction of unnecessary pain or suffering on animals".
- The Animal Welfare Board of India (AWBI) was established in 1962 under Section 4 of the Act.
- This Act provides for punishment for causing unnecessary cruelty and suffering to animals. The Act defines animals and different forms of animals.

- In the case of a first offence, fine which shall not be less than ten rupees but which may extend to fifty rupees.
- In the case of a second or subsequent offence committed within three years of the previous offence, fine which shall not be less than twenty-five rupees but which may extend to one hundred rupees or with imprisonment for a term which may extend to three months, or with both.
- It provides the guidelines relating to experimentation on animals for scientific purposes.
- The Act enshrines the provisions relating to the exhibition of the performing animals, and offences committed against the performing animals.

**Criticism:**

- The Act has been criticised for being 'speciesist' (put very simply, the assumption that humans are a superior species deserving more rights), for its quantum of punishment being negligible, for not defining 'cruelty' adequately, and for slapping a flat punishment without any gradation of crimes.

**5. Food Safety and Standards (GM Foods) (Draft) Regulations:**

- The FSSAI recently released a new draft of Genetically Modified (GM) Food regulations for public consultation. This comes at a time when the issue concerning the genetically modified (GM) mustard is under the spotlight.

**Draft Regulations:**

- The new draft is different from the old version that was released by the Food Safety and Standards Authority of India (FSSAI) in November 2021. The recently-released draft aims to simplify the procedure of prior approvals for food that are derived from genetically modified organisms (GMOs). It also expands the scope of regulations by including food ingredients produced from GMOs that do not have any modified DNA.

**What does the draft regulations propose?**

- The draft regulations propose front-of-the-pack labeling of packaged food products that contain 1 per cent or more of GM ingredients.
- It is applicable for genetically modified organisms (GMOs) used in food items having 1 per cent or more of GM ingredients produced from modified DNA and GMO-derived ingredients, additives or processing aids.
- No one will be allowed to manufacture, pack, store, sell, market, distribute or import any food items produced from GMOs, except those that have received prior approval from the FSSAI.
- Manufacturers and importers of genetically modified food products and ingredients are required to receive approval from the food regulator.
- If the GMOs are used as food or source material for the production of food, clearance is required from the Genetic Engineering Appraisal Committee (GEAC) – the central government authority responsible for monitoring the environmental risks posed by the GMOs.
- If the genetically modified organism is used as seeds or for cultivation, the applicant is required to submit an application to the GEAC to comply with the Environment Ministry's 1989 rules.
- Food products having individual 1 per cent or more GM ingredients must be labeled as "contains genetically modified organisms". This label must be at front of the pack of pre-



packaged products. This rule is also applicable to the presence of adventitious or technically unavoidable presence of GM ingredients.

#### **6. India's First Suicide Prevention Policy:**

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- Recently the Ministry of Health and Family Welfare announced a National Suicide Prevention Strategy.
- The newly launched National Suicide Prevention Strategy is the first of its kind in the country.
- The suicide prevention policy comes with time-bound action plans and multi-sectoral collaborations to achieve reduction in suicide mortality by 10% 2030.
- The strategy broadly seeks to:
- Establish effective surveillance mechanisms for suicide within the next three years,
- Establish psychiatric outpatient departments that will provide suicide prevention services through the District Mental Health Programme in all districts within the next five years, and
- To integrate a mental well-being curriculum in all educational institutions within the next eight years.

#### **The policy envisages:**

- Developing guidelines for responsible media reporting of suicides, and
- Restricting access to means of suicide.

#### **Community & societal support:**

- The stress is on developing community resilience and societal support for suicide prevention.

#### **In line with global strategy:**

- The UN's Sustainable Development Goal (SDG) 3.4 aims to reduce premature mortality from non-communicable diseases by one-third, through prevention and treatment, and promote mental health and well-being.
- One of the indicators for this is the suicide rate.
- While the strategy is in line with the WHO's South East-Asia Region Strategy for suicide prevention, it says it will remain true to India's cultural and social milieu.

#### **Government of India Initiatives:**

##### **National Mental Health Programme (NMHP), 1982:**

- To ensure the availability and accessibility of minimum mental healthcare for all in the foreseeable future, particularly to the most vulnerable and underprivileged sections of the population.
- Mental Healthcare Act, 2017 - Decriminalising suicide attempts:
- It was passed in 2017, came into effect in May 2018 and replaced the Mental Health Act of 1987.
- To the joy of most Indian medical practitioners and advocates of mental health, the act decriminalised suicide attempts in India.
- It also included WHO guidelines in the categorisation of mental illnesses.
- The most significant provision in the act was "advanced directives", which allowed individuals with mental illnesses to decide the course of their treatment and also appoint someone to be their representative.

- It also restricted the use of electroconvulsive therapy (ECT), and banned its use on minors, finally introducing measures to tackle stigma in Indian society.

#### **Manodarpan Initiative:**

- It is an initiative under Atmanirbhar Bharat Abhiyan.
- It aims to provide psycho-social support to students for their mental health and well-being.

#### **Kiran Helpline:**

- The helpline is a giant step towards suicide prevention, and can help with support and crisis management.
- The helpline aims to provide early screening, first-aid, psychological support, distress management, mental well-being, and psychological crisis management and will be managed by the Department of Empowerment of Persons with Disabilities (DEPWD).

#### **Issues & way ahead:**

##### **Focus not up to the mark:**

- The recent National Crime Records Bureau (NCRB) report stated that 1.64 lakh people died by suicide in 2021.
- This is 10 per cent higher than the COVID deaths in India 2020, and 6.8 times the maternal death (23800) in 2020.
- Yet, we have had so much more focus and efforts on COVID protocols and maternal health as compared to suicide prevention.

##### **Need for collaborative efforts:**

- Given that suicide is a complex issue, tackling it will necessarily require inter-sectoral collaboration.
- The 2021 NCRB data shows that family issues (33.2 per cent), unemployment/indebtedness/career problems (7.7 percent), health concerns (18.6 percent) are some of the major causes.
- To work on prevention, we need the Ministry of Women and Child Development, Ministry of Commerce & Industry, the MoHFW, among others, to work collaboratively.
- Requirement of an effective implementation:
- The strategy should now be passed on to the States for them to develop locally relevant action plans; and then cascade to the district, primary health and community levels.
- Further efforts are now required to prevent suicides as a public health priority.
- Suicides impact all sections of the society and thus require concerted and collaborative efforts from individuals and the community at large.

#### **7. Draft Digital Personal Data Protection Bill 2022:**

- The Union Government has released a revised personal data protection bill, now called the Digital Personal Data Protection Bill, 2022.
- The Bill has been introduced after 3 months of the withdrawal of the Personal Data Protection Bill, 2019.

##### **Seven Principles of the 2022 Bill:**

- Firstly, usage of personal data by organisations must be done in a manner that is lawful, fair to the individuals concerned and transparent to individuals.
- Secondly, personal data must only be used for the purposes for which it was collected.
- The third principle talks of data minimisation.
- The fourth principle puts an emphasis on data accuracy when it comes to collection.

- The fifth principle talks of how personal data that is collected cannot be “stored perpetually by default” and storage should be limited to a fixed duration.
- The sixth principle says that there should be reasonable safeguards to ensure there is “no unauthorized collection or processing of personal data”.
- Seventh principle states that “the person who decides the purpose and means of the processing of personal data should be accountable for such processing”.

### **Key Features of the Digital Personal Data Protection Bill:**

#### **Data Principal and Data Fiduciary:**

- Data Principal refers to the individual whose data is being collected.
- In the case of children (<18 years), their parents/lawful guardians will be considered their “Data Principals”.
- Data Fiduciary is the entity (individual, company, firm, state etc), which decides the “purpose and means of the processing of an individual’s personal data”.
- Personal Data is “any data by which an individual can be identified”.
- Processing means “the entire cycle of operations that can be carried out in respect of personal data”.

#### **Significant Data Fiduciary:**

- Significant Data Fiduciaries are those who deal with a high volume of personal data. The Central government will define who is designated under this category based on a number of factors.
- Such entities will have to appoint a ‘Data protection officer’ and an independent Data Auditor.

#### **Rights of Individuals:**

##### **Access to Information:**

- The bill ensures that individuals should be able to “access basic information” in languages specified in the eighth schedule of the Indian Constitution.

##### **Right to Consent:**

- Individuals need to give consent before their data is processed and “every individual should know what items of personal data a Data Fiduciary wants to collect and the purpose of such collection and further processing”.
- Individuals also have the right to withdraw consent from a Data Fiduciary.

##### **Right to Erase:**

- Data principals will have the right to demand the erasure and correction of data collected by the data fiduciary.

##### **Right to Nominate:**

- Data principals will also have the right to nominate an individual who will exercise these rights in the event of their death or incapacity.

##### **Data Protection Board:**

- The Bill also proposes to set up a Data Protection Board to ensure compliance with the Bill.
- In case of an unsatisfactory response from the Data Fiduciary, the consumers can file a complaint to the Data Protection Board.

##### **Cross-border Data Transfer:**

- The bill allows for cross-border storage and transfer of data to “certain notified countries and territories” provided they have a suitable data security landscape, and the Government can access data of Indians from there.

##### **Financial Penalties:**

#### **For Data Fiduciary:**

- The bill proposes to impose significant penalties on businesses that undergo data breaches or fail to notify users when breaches happen.
- The penalties will be imposed ranging from Rs. 50 crores to Rs. 500 crores.

#### **For Data Principal:**

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- If a user submits false documents while signing up for an online service, or files frivolous grievance complaints, the user could be fined up to Rs 10,000.

#### **Exemptions:**

- The government can exempt certain businesses from adhering to provisions of the bill on the basis of the number of users and the volume of personal data processed by the entity.
- This has been done keeping in mind startups of the country who had complained that the Personal Data Protection Bill, 2019 was too “compliance intensive”.
- National security-related exemptions, similar to the previous 2019 version, have been kept intact.
- The Centre has been empowered to exempt its agencies from adhering to provisions of the Bill in the interest of sovereignty and integrity of India, security of the state, friendly relations with foreign states, maintenance of public order or preventing incitement to any cognisable offence.

#### **Why is Digital Personal Data Protection Bill Significant?**

- The new Bill offers significant concessions on cross-border data flows, in a departure from the previous Bill’s contentious requirement of local storage of data within India’s geography.
- It offers a relatively soft stand on data localisation requirements and permits data transfer to select global destinations which is likely to foster country-to-country trade agreements.
- The bill recognises the data principal’s right to postmortem privacy (Withdraw Consent) which was missing from the PDP Bill, 2019 but had been recommended by the Joint Parliamentary Committee (JPC).

#### **How has India Strengthened Data Protection Regime?**

- Justice K. S. Puttaswamy (Retd) vs Union of India 2017:
- In August 2017, a nine-judge bench of the Supreme Court in Justice K. S. Puttaswamy (Retd) Vs Union of India unanimously held that Indians have a constitutionally protected fundamental right to privacy that is an intrinsic part of life and liberty under Article 21.

#### **B.N. Srikrishna Committee 2017:**

- Government appointed a committee of experts for Data protection under the chairmanship of Justice B N Srikrishna in August 2017, that submitted its report in July 2018 along with a draft Data Protection Bill.
- The Report has a wide range of recommendations to strengthen privacy law in India including restrictions on processing and collection of data, Data Protection Authority, right to be forgotten, data localisation etc.
- Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021:
- IT Rules (2021) mandate social media platforms to exercise greater diligence with respect to the content on their platforms.

#### **What Data Protection Laws are there in Other Nations?**

### **European Union Model:**

- The General Data Protection Regulation focuses on a comprehensive data protection law for processing of personal data.
- In the EU, the right to privacy is enshrined as a fundamental right that seeks to protect an individual's dignity and her right over the data she generates.

### **Page|61 US Model:**

- There is no comprehensive set of privacy rights or principles in the US that, like the EU's GDPR, addresses the use, collection, and disclosure of data.
- Instead, there is limited sector-specific regulation. The approach towards data protection is different for the public and private sectors.
- The activities and powers of the government vis-a-vis personal information are well-defined and addressed by broad legislation such as the Privacy Act, the Electronic Communications Privacy Act, etc.
- For the private sector, there are some sector-specific norms.

### **China Model:**

- New Chinese laws on data privacy and security issued over the last 12 months include the Personal Information Protection Law (PIPL), which came into effect in November 2021.
- It gives Chinese data principals new rights as it seeks to prevent the misuse of personal data.
- The Data Security Law (DSL), which came into force in September 2021, requires business data to be categorized by levels of importance, and puts new restrictions on cross-border transfers.

### **8. Amendment in Aadhaar Regulations:**

- Recently, the government has amended Aadhaar regulations. The Aadhaar (Enrolment and Update) Regulations have been updated to reflect the changes.
- Aadhaar is a 12-digit unique identity for every Indian individual, including children and infants
- Enables identification for every resident Indian.
- Establishes uniqueness of every individual on the basis of demographic and biometric information.
- It is a voluntary service that every resident can avail irrespective of present documentation.
- Each individual will be given a single unique Aadhaar ID number.
- Aadhaar will provide a universal identity infrastructure which can be used by any identity-based application (like ration card, passport, etc.)
- 134 crore Aadhaar numbers have been issued till date.
- Around 1000 government schemes – 650 from state governments and 315 from central government use Aadhaar authentication services to avoid deduplication and removal of ghost beneficiaries.
- Aadhaar enrolment of adult citizens is nearing 100 per cent.

### **About the new rules:**

#### **Updating the documents:**

- As per the regulations earlier, residents who were older than 15 years at the time of enrolment were recommended to update their biometric data every 10 years.

- The process of updating documents is not mandatory.
- Ensuring accuracy
- This process will help in ensuring the accuracy of information in the Central Identities Data Repository (CIDR).

#### **Demographic information:**

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- The amendment of the Aadhaar regulation is limited to updating demographic information and does not involve biometric data such as fingerprints.

#### **Issues with Aadhaar:**

- Aadhaar act allows cancellation of Aadhaar number for any reason by the government and citizens have no recourse.
- A Centralized database is a concern because once it is compromised everyone is at risk.
- There is no ID or address verification and there is no means of identifying fakes.
- There is no data protection law in place in India.
- Enrolment software hacks allowed foreign nationals to create Aadhaar numbers thus creating a national security risk.
- UIDAI does not have a monitoring mechanism but only an audit mechanism.
- Data goes to third parties vulnerability increases due to that.

#### **Usage of Aadhaar:**

- For Governments, Service Agencies
- UIDAI issues Aadhaar numbers to the residents only after de-duplicating their demographic and biometric attributes against its entire database.
- Aadhaar seeding enables elimination of duplicates under various schemes which leads to substantial savings to the government exchequers.
- It also provides the government with accurate data on the beneficiaries and enables implementation of direct benefit transfer (DBT) programmes. Aadhaar authentication enables the implementing agencies to verify the beneficiaries at the time of service/benefits delivery and also ensures the targeted delivery of benefits to them. All these activities will lead to:-
- **Curbing Leakages through Targeted Delivery:** All social welfare programmes where beneficiaries are required to be confirmed before the service delivery, stand to benefit from UIDAI's authentication services.
- This will result in curbing leakages and ensuring that services are delivered to the intended beneficiaries only.
- **Examples** include subsidized food and kerosene delivery to Public Distribution System (PDS) beneficiaries, worksite attendance of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) beneficiaries, etc.
- **Improving Efficiency and Efficacy:** With the Aadhaar platform providing accurate and transparent information about the service delivery mechanism, government can improve disbursement systems and utilize its scarce development funds more effectively and efficiently.

#### **For Residents:**

- Aadhaar system provides single source offline/online identity verification across the country for the residents.
- Once residents enroll, they can use their Aadhaar number to authenticate and establish their identity multiple times using electronic means or through offline verification, as the case may be.

- It eliminates the hassle of repeatedly providing supporting identity documents each time a resident wishes to access services, benefits or subsidies.
- Since Aadhaar is universal identity accepted across the whole country, the Aadhaar system enables mobility to millions of people who migrate from one part of the country to another by providing a portable proof of identity that can be verified through Aadhaar authentication on-line anytime, anywhere.

### **About Unique Identification Authority of India (UIDAI) & Aadhar:**

#### **Aadhaar Act & Establishment of UIDAI:**

- The UIDAI is a statutory authority established under the provisions of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016 (“Aadhaar Act 2016”) by the Government of India, under the Ministry of Electronics and Information Technology (MeitY).

#### **Need of UIDAI:**

- UIDAI was created to issue Unique Identification numbers (UID), named as “Aadhaar”, to all residents of India. The UID had to be –
  - ✓ Robust enough to eliminate duplicate and fake identities, and
  - ✓ Verifiable and authenticable in an easy, cost-effective way.
  - ✓ Under the Aadhaar Act 2016, UIDAI is responsible for:
  - ✓ Aadhaar enrolment and authentication, including operation and management of all stages of Aadhaar life cycle,
  - ✓ Developing the policy, procedure, and system for issuing Aadhaar numbers to individuals and
  - ✓ Perform authentication and the security of identity information and authentication records of individuals.

### **9. Amendment in Electoral Bonds Scheme:**

- Weeks ahead of elections in certain states, the Central Government has amended the Electoral Bond Scheme.

#### **What are the Amendments Made to the Scheme?**

##### **Additional Period of 15 Days:**

- Introduced a new para, stating that an additional period of fifteen days shall be specified by the Central Government in the year of general elections to the Legislative Assembly of States and Union territories with Legislature.
- In 2018, when the Electoral Bond Scheme was introduced, these bonds were made available for a period of 10 days each in January, April, July and October, as may be specified by the central government.
- An additional period of 30 days was to be specified by the Central Government in the year of the General election to the House of People.

##### **Validity:**

- The Electoral Bonds shall be valid for fifteen calendar days from the date of issue and no payment shall be made to any payee Political Party if the Electoral Bond is deposited after expiry of the validity period.
- The Electoral Bond deposited by an eligible Political Party in its account shall be credited on the same day.

##### **Eligibility:**

- Only the political parties registered under Section 29A of the Representation of the People Act, 1951 which secured at least 1% of votes polled in the last General Election to the Lok Sabha or the State Legislative Assembly are eligible to receive Electoral Bonds.

### **What are the Concerns Regarding Electoral Bonds?**

#### **Contradicting its Basic Idea:**

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- The central criticism of the electoral bonds scheme is that it does the exact opposite of what it was meant to do: bring transparency to election funding.
- For example, critics argue that the anonymity of electoral bonds is only for the broader public and opposition parties.

#### **Possibility of Extortion:**

- The fact that such bonds are sold via a government-owned bank (SBI) leaves the door open for the government to know exactly who is funding its opponents.
- This, in turn, allows the possibility for the government of the day to either extort money, especially from the big companies, or victimise them for not funding the ruling party – either way providing an unfair advantage to the party in power.

#### **A Blow to Democracy:**

- Through an amendment to the Finance Act 2017, the Union government has exempted political parties from disclosing donations received through electoral bonds.
- This means the voters will not know which individual, company, or organization has funded which party, and to what extent.
- However, in a representative democracy, citizens cast their votes for the people who will represent them in Parliament.

#### **Compromising Right to Know:**

- The Supreme Court of India has long held that the “right to know”, especially in the context of elections, is an integral part of the right to freedom of expression (Article 19) under the Indian Constitution.

#### **Against Free & Fair Elections:**

- The bonds provide no details to the citizens but said anonymity does not apply to the government, which can always access the donor details by demanding the data from the State Bank of India (SBI).
- This implies that the government in power can leverage this information and disrupt free and fair elections.

#### **Crony Capitalism:**

- The electoral bonds scheme removes all pre-existing limits on political donations and effectively allows well-resourced corporations to fund elections, subsequently paving the way for crony capitalism.
- Crony Capitalism is an economic system characterized by close, mutually advantageous relationships between business leaders and government officials.

#### **Way Forward:**

- There is a need for effective regulation of political financing along with bold reforms to break the vicious cycle of corruption and erosion of quality of democratic polity.
- It is crucial to plug the loopholes in the current laws to make the entire governance machinery more accountable and transparent.
- Voters can also help bring in substantial changes by demanding awareness campaigns. If voters reject candidates and parties that overspend or bribe them, democracy would move a step higher.



## 10. SC upholds 10 per cent quota for EWS:

- Recently, the Supreme Court has upheld the validity of the 103rd Constitutional Amendment which provides 10% reservation for the Economically Weaker Sections (EWS) among forward castes in government jobs and colleges across India.

Page|65 **What is the Verdict?**

### **Majority View:**

- The 103rd constitutional amendment cannot be said to breach the basic structure of the Constitution.
- The EWS quota does not violate equality and the basic structure of the constitution. Reservation in addition to existing reservation does not violate provisions of the Constitution.
- The reservation is an instrument of affirmative action by the state for the inclusion of backward classes.
- Basic structure can't be breached by enabling the state to make provisions for education.
- Reservation is instrumental not just for inclusion of socially and economically backward classes into the society but also to class so disadvantaged.
- Reservations for EWS does not violate basic structure on account of 50% ceiling limit fixed by Mandal Commission because ceiling limit is not inflexible.
- 50% rule formed by the Supreme Court in the Indira Sawhney judgment in 1992 was "not inflexible". Further, it had applied only to SC/ST/SEBC/OBC communities and not the general category.
- The Scheduled Castes, Scheduled Tribes and the backward class for whom the special provisions have already been provided in Article 15(4), 15(5) and 16(4) form a separate category as distinguished from the general or unreserved category.

### **Minority View:**

- Reservations were designed as a powerful tool to enable equal access. Introduction of economic criteria and excluding SC (Scheduled Castes), ST (Scheduled Tribe), OBC (Other Backward Classes), saying they had these pre-existing benefits is injustice.
- The EWS quota may have a reparative mechanism to have a level playing field and the exclusion of SC, ST, OBC discriminates against equality code and violates basic structure.
- Permitting the breach of 50% ceiling limit would become "a gateway for further infractions and result in compartmentalization (division into sections).

### **Economically Weaker Section (EWS) Quota:**

- The 10% EWS quota was introduced under the 103rd Constitution (Amendment) Act, 2019 by amending Articles 15 and 16.
- It inserted Article 15 (6) and Article 16 (6).
- It is for economic reservation in jobs and admissions in educational institutes for Economically Weaker Sections (EWS).
- It was enacted to promote the welfare of the poor not covered by the 50% reservation policy for Scheduled Castes (SCs), Scheduled Tribes (STs) and Socially and Educationally Backward Classes (SEBC).
- It enables both the Centre and the States to provide reservations to the EWS of society.

### **Significance:**

#### **Addresses Inequality:**

- The 10% quota is progressive and could address the issues of educational and income inequality in India since the economically weaker sections of citizens have remained excluded from attending higher educational institutions and public employment due to their financial incapacity.

#### **Recognition of the Economic Backwards:**

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- There are many people or classes other than backward classes who are living under hunger and poverty-stricken conditions.
- The proposed reservation through a constitutional amendment would give constitutional recognition to the poor from the upper castes.

#### **Reduction of Caste-Based Discrimination:**

- Moreover, it will gradually remove the stigma associated with reservation because reservation has historically been related to caste and most often the upper caste looks down upon those who come through the reservation.

#### **Concerns:**

##### **Unavailability of Data:**

- The Union or state governments have no such data to prove that 'upper' caste individuals, who have less than Rs 8 lakh annual income, are not adequately represented in government jobs and higher educational institutions. There is a strong possibility that they are actually over-represented in these places.

##### **Arbitrary Criteria:**

- The criteria used by the government to decide the eligibility for this reservation is vague and is not based on any data or study.
- Even the SC questioned the government whether they have checked the GDP per capita for every State while deciding the monetary limit for giving the EWS reservation.
- Statistics show that the per capita income in states differs widely - Goa is the state having the highest per capita income of almost Rs. 4 lakhs whereas Bihar is at the bottom with Rs.40,000.

##### **Way Forward:**

- It is high time now that the Indian political class overcame its tendency of continually expanding the scope of reservation in pursuit of electoral gains, and realised that it is not the panacea for problems.
- Instead of giving reservation based on different criteria, the government should focus on quality of education and other effective social upliftment measures. It should create a spirit of entrepreneurship and make them job-givers instead of a job seeker.

#### **11. SC calls for ban on two-finger test:**

- The **Supreme Court** of India had recently called for the ban on the two-finger test in rape cases. It had provided similar judgement nearly a decade ago.
- A bench having Justice DY Chandrachud and Justice Hima Kohli recently made observations while overturning the acquittal of a rape accused in the Telangana High Court. It made several key observations during the judgement:
  - ✓ It held that the practice of two-finger test in rape cases was "patriarchal" and "sexist" and called for its removal from the medical education syllabus.
  - ✓ Anyone who conducts two-finger test would be guilty of misconduct.
  - ✓ The practice re-traumatizes and re-victimizes women who were victims of rape.
  - ✓ It is based on the misleading assumption that sexually active women cannot be raped.

- ✓ Evidence of victim's sexual history is not related to the rape case.

### **What is two-finger test?**

- ✓ The two-finger test, known as per-vaginal examination in medical jargon, is the practice of inserting two fingers in the vagina to assess laxity of vaginal muscles and examine the hymen. This practice is used to gauge whether an individual is sexually active or a virgin.
- According to experts, this practice is unscientific. This is because hymen and laxity of the vaginal orifice may occur for reasons that are not related to sex. It is used by doctors to assess the conditions of uterus.
- After the 2012 Nirbhaya gang rape case, the Union Ministry of Health and Family Welfare updated the proforma for medical examination of rape victims to remove the two-finger test. The 2013 SC order had banned the test. However, its use is still prevalent in the society. Its presence in medical education syllabus has contributed to the continuation. Defence lawyers use an "affirmative" two-finger test question the victim's character and refute allegations that the sex was non-consensual. This played a role in many victims losing cases.

## **International Affairs**

### **1. Russia withdraws from Black Sea Grain Initiative:**

- Recently, Russia re-joined the Black Sea Grain Initiative.
- The Black Sea Grain initiative endeavours to tackle escalating food prices emanating from supply chain disruptions because of Russian actions in the world's 'breadbasket'.
- The deal brokered by the United Nations (UN) and Turkey, was signed in Istanbul in July, 2022.

#### **Objective:**

- Initially stipulated for a period of 120 days, the deal was to provide for a safe maritime humanitarian corridor for Ukrainian exports (particularly for food grains).
- The central idea was to calm markets by ensuring an adequate supply of grains, thereby limiting food price inflation.

#### **Role of Joint Coordination Centre (JCC):**

- The deal put in place a Joint Coordination Centre (JCC), comprising senior representatives from Russia, Turkey, Ukraine and the UN for oversight and coordination.
- All commercial ships are required to register directly with the JCC to ensure appropriate monitoring, inspection and safe passage. Inbound and outbound ships (to the designated corridor) transit as per a schedule accorded by the JCC post-inspection.
- This is done so as to ensure there is no unauthorised cargo or personnel onboard.
- Following this, they are allowed to sail onwards to Ukrainian ports for loading through the designated corridor.

#### **Why is the Black Sea Grain Initiative Important?**

- Ukraine is among the largest exporters of wheat, maize, rapeseed, sunflower seeds and sunflower oil, globally.

- Its access to the deep-sea ports in the Black Sea enables it to directly approach Russia and Europe along with grain importers from the Middle East and North Africa.
- The initiative has also been credited for having made a huge difference to the global cost of living crisis.
- Approximately 9.8 million tonnes of grains have been shipped since the initiative commenced.
- People hoarding the grain in the hope of selling it for a sizable profit owing to the supply crunch were now obligated to sell.
- Although the initiative alone cannot address global hunger, it can avert the chances of the global food crisis spiralling further, especially when the region is yet to scale prior year levels.

## 2. **Multidimensional Integrated Stabilisation Mission in Mali (MINUSMA):**

- India has decided to send a utility helicopter unit to the Multidimensional Integrated Stabilisation Mission in Mali (MINUSMA). Bangladesh and Pakistan will each send an armed helicopter unit to this operation.
- The Multidimensional Integrated Stabilisation Mission in Mali (MINUSMA) is a United Nations peacekeeping mission that was set up in 2013 by the UNSC to stabilize the western African country after the 2012 Tuareg rebellion.
- This mission was set up to assist in the political processes of Mali and undertake numerous security-related tasks within the conflict-hit country. It is tasked with supporting the transitional authorities of Mali in achieving the political stabilization and implementing the transitional roadmap.
- In 2014, the UNSC expanded the scope of the mission to ensure security for the citizens, supporting national political dialogue and reconciliation, assisting in the re-establishment of state authority, and protecting human rights in the country.

## 3. **Kuki-Chin Bangladeshi Refugee Issue:**

- Recently, many Kuki-Chin refugees from Chittagong Hill Tract Area in Bangladesh entered Mizoram (India) fearing an attack from Bangladesh security forces against them.
- Mizoram Government expressed sympathy for the refugees, who belong to the Chin-Kuki-Mizo communities, and resolved to give temporary shelter, food and other relief as per convenience of the state government.

### **What Causes these Refugee Influx?**

- The CHT (Chittagong Hill Tracts) is an impoverished hilly, forested area that sprawls over more than 13,000 sq km of the Khagrachari, Rangamati, and Bandarban districts of southeastern Bangladesh, bordering Mizoram to the east, Tripura to the north, and Myanmar to the south and southeast.
- A significant portion of the population is tribal, and culturally and ethnically different from the majority Muslim Bangladeshis who live in the country's deltaic mainland.
- The tribal population of the CHT has ethnic links with tribal populations in the adjacent areas of India, mainly in Mizoram.
- Mizoram shares a 318-km-long border with Bangladesh
- Mizoram is already playing host to about 30,000 refugees who have been fleeing fighting in Myanmar's Chin state since around July-August 2021.

### How are Refugees Protected in India?

- India ensures that refugees can access protection services that are on a par with their fellow Indian hosts.
- For those refugees registered directly by the Government such as those from Sri Lanka, they are entitled to Aadhaar cards and PAN cards to enable their economic and financial inclusion.
- They can have access to national welfare schemes and contribute effectively to the Indian economy.
- However, for those registered with UNHCR, such as refugees from Afghanistan, Myanmar and other countries, while they have access to protection and limited assistance services, they do not possess government-issued documentation.
- Thus, they are unable to open bank accounts and don't get benefit from all government welfare schemes, and are thus inadvertently left behind.

### What is India's Refugee Policy?

- India lacks specific legislation to address the problem of refugees, in spite of their increasing inflow.
- India is not a party to the 1951 Refugee Convention and its 1967 Protocol, the key legal documents pertaining to refugee protection.
- However, India has had a stellar record on the issue of refugee protection. India has a moral tradition for assimilating foreign people and culture.
- Moreover, the Foreigners Act, 1946, fails to address the peculiar problems faced by refugees as a class.
- It also gives unbridled power to the Central government to deport any foreign citizen.
- Further, the constitution of India also respects the life, liberty, and dignity of human beings.
- The Supreme Court in the National Human Rights Commission vs. State of Arunachal Pradesh (1996) held that "while all rights are available to citizens, persons including foreign citizens are entitled to the right to equality and the right to life, among others."
- Further, Article 21 of the Constitution encompasses the right of non-refoulement.
- Non-refoulement is the principle under international law which states that a person fleeing persecution from his own country should not be forced to return to his own country.

### What is the Status of Refugees in India?

- Since its independence, India has accepted various groups of refugees from neighbouring countries, including:
  - a. Partition refugees from Pakistan in 1947.
  - b. Tibetan refugees that arrived in 1959.
  - c. Chakma and Hajong from present day Bangladesh in early 1960s.
  - d. Other Bangladeshi refugees in 1965 and 1971.
  - e. Sri Lankan Tamil refugees from the 1980s.
  - f. Most recently Rohingya refugees from Myanmar, 2022.

### What is the Difference Between Refugees and Migrants?

- Refugees are people outside their countries of origin who are in need of international protection because of a serious threat to their life, physical integrity or freedom in their

country of origin as a result of persecution, armed conflict, violence or serious public disorder.

- Migrants leave their country because they want to work, study or join a family.
- There are well-defined and specific grounds, which have to be satisfied before a person can qualify to be a 'refugee'
- There is no internationally accepted legal definition of a migrant.

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#### Way Forward:

- Model laws on asylum and refugees that were drafted by the National Human Rights Commission (NHRC) decades ago but not implemented by the government could be revised by an expert committee.
- If such laws are enacted, it would give legal sanctity and uniformity, ensuring the protection of human rights.
- If India had domestic legislation regarding refugees, it could have deterred any oppressive government in the neighborhood to persecute their population and make them flee to India.
- Protection of women and child refugees from violence and harassment by authorities or local residents in consonance with Fundamental Duty enshrined in our Constitution.
- Article 51A (e) enjoins upon every citizen to renounce practices derogatory to the dignity of women.

#### 4. India-Australia Trade Pact:

- Recently, the Australian Parliament approved the India-Australia Economic Cooperation and Trade Agreement (Ind-Aus ECTA).
- It is the first Free Trade Agreement (FTA) that India has signed with a major developed country in over a decade.
- The Agreement encompasses cooperation across the entire gamut of bilateral economic and commercial relations between the two friendly countries, and covers areas like:
  - ✓ Trade in Goods, Rules of Origin
  - ✓ Trade in Services
  - ✓ Technical Barriers to Trade (TBT)
  - ✓ Sanitary and Phytosanitary (SPS) measures
  - ✓ Dispute Settlement, Movement of Natural Persons
  - ✓ Telecom, Customs Procedures
  - ✓ Pharmaceutical products, and Cooperation in other Areas
- ECTA provides for an institutional mechanism to encourage and improve trade between the two countries.
- The ECTA between India and Australia covers almost all the tariff lines dealt in by India and Australia respectively.
- India will benefit from preferential market access provided by Australia on 100% of its tariff lines.
- This includes all the labour-intensive sectors of export interest to India such as Gems and Jewellery, Textiles, leather, footwear, furniture etc.
- On the other hand, India will be offering preferential access to Australia on over 70% of its tariff lines, including lines of export interest to Australia which are primarily raw materials and intermediaries such as coal, mineral ores and wines etc.

- Under the agreement, Indian graduates from STEM (Science, Technology, Engineering and Mathematics) will be granted extended post-study work visas.
- Australia will also set up a programme to grant visas to young Indians looking to pursue working holidays in Australia.
- Annual Visa quota of 1800 is to be instituted for India Yoga teachers and Chefs.
- It is also estimated that 10 lakh jobs will be created as a result of ECTA.

#### **How has been the India- Australia Relation so far?**

- India and Australia enjoy excellent bilateral relations that have undergone transformational evolution in recent years, developing along a positive track, into a friendly partnership.
- This is a special partnership characterised by shared values of pluralistic, parliamentary democracies, Commonwealth traditions, expanding economic engagement, long standing people-to-people ties and increasing high level interaction.
- The India-Australia Comprehensive Strategic Partnership initiated during the India-Australia Leaders' Virtual Summit held in June 2020 is the cornerstone of India-Australia multi-faceted bilateral relations.
- Growing India-Australia economic and commercial relations contribute to the stability and strength of a rapidly diversifying and deepening bilateral relationship between the two countries.
- India and Australia have been each other's important trading partners.
- Australia is the 17th largest trading partner of India and India is Australia's 9th largest trading partner.
- India-Australia bilateral trade for both merchandise and services is valued at USD 27.5 billion in 2021.
- India's merchandise exports to Australia grew 135% between 2019 and 2021. India's exports consist primarily of a broad-based basket largely of finished products and were USD 6.9 billion in 2021.
- India's merchandise imports from Australia were USD 15.1 billion in 2021, consisting largely of raw materials, minerals and intermediate goods.
- India and Australia are partners in the trilateral Supply Chain Resilience Initiative (SCRI) arrangement along with Japan which seeks to enhance the resilience of supply chains in the Indo-Pacific Region.
- Further, India and Australia are also members of the QUAD grouping (India, the US, Australia and Japan), also comprising the US, and Japan, to further enhance cooperation and develop partnership across several issues of common concern.

#### **Way Forward:**

- The India-Australia ECTA will further cement the already deep, close and strategic relations between the two countries and will significantly enhance bilateral trade in goods and services, create new employment opportunities, raise living standards, and improve the general welfare of the peoples of the two countries.
- Both India and Australia share a vision of a free, open, inclusive and rules-based Indo-Pacific region and cooperative use of the seas by adherence to international law including the United Nations Convention on the Law of the Sea (UNCLOS) and peaceful resolution of disputes rather than through unilateral or coercive actions.

### 5. Indo-Pacific Regional Dialogue 2022:

- Recently, the fourth edition of Indo Pacific Regional Dialogue concluded in Delhi.
- IPRD is an apex level international annual conference of the Indian Navy.
- In 2018, the initial conception of an IPRD was made.
- With the exception of 2020, when it had to be postponed owing to the Covid-19, the event has been hosted annually since its initial year in 2018.
- The National Maritime Foundation (NMF) is the Navy's knowledge partner and chief organizer of each edition of the event.

#### Theme for 2022:

- Operationalising the Indo-Pacific Oceans Initiative
- The IPRD reviews the current geopolitics in the Indo-Pacific region and identifies opportunities, dangers, and problems that might be present.
- IPRD remains crucial to its interests because one of the main goals of the NMF is to conduct analyses of international relations and geopolitical factors that are important to India strategically,

#### What is the Indo-Pacific Oceans Initiative (IPOI)?

- It was articulated by the Indian Prime Minister at the 14th East Asia Summit (EAS) in 2019.
- It is a comprehensive and inclusive construct for regional cooperation that is focused on seven interconnected spokes or pillars:
  - ✓ Maritime Security
  - ✓ Maritime Ecology
  - ✓ Maritime Resources
  - ✓ Disaster Risk-reduction and Management
  - ✓ Trade-Connectivity and Maritime Transport
  - ✓ Capacity-building and Resource sharing
  - ✓ Science, Technology and Academic Cooperation

#### What is the Indo-Pacific Region?

- Indo-Pacific is a recent concept. It was about a decade ago that the world started talking about the Indo-Pacific; its rise has been quite significant.
- One of the reasons behind the popularity of this term is an understanding that the Indian Ocean and the Pacific are a linked strategic theater.
- Also, the centre of gravity has shifted to Asia. The reason being maritime routes, the Indian Ocean and the Pacific provide the sea lanes. The majority of the world's trade passes through these oceans.

#### Significance:

- The Indo-Pacific region is one of the most populous and economically active regions of the world which includes four continents: Asia, Africa, Australia and America.
- The dynamism and vitality of the region is self-evident, 60% of the world's population and 2/3rd of the global economic output makes this region a global economic centre.
- The region is also a great source and destination for Foreign Direct Investment. Many of the world's critical and large supply chains have an Indo-Pacific connection.
- There are vast reserves of marine resources in the Indian and Pacific Oceans combined, including offshore hydrocarbons, methane hydrates, seabed minerals and rare earth metals.



- Sizable coastlines and Exclusive Economic Zones (EEZs) provide littoral countries with competitive capabilities for exploiting these resources.
- In turn, a number of the world's largest economies are located in the Indo-Pacific region, including India, U.S.A, China, Japan, Australia.

#### **6. Global Partnership on Artificial Intelligence:**

- Recently, India has been handed over the presidency Global Partnership on Artificial Intelligence (GPAI) for 2022-23 by the outgoing Council Chair, France in its 3rd Annual Summit in Japan.
- This development comes on the heels of assuming the Presidency of the G20, a league of the world's largest economies.

#### **What are the Highlights of the Annual GPAI summit?**

- ✓ Tokyo is the first Asian city to host this summit.
- ✓ The meeting discussed these four themes:
  - ✓ Responsible AI,
  - ✓ Data governance,
  - ✓ Future of work,
  - ✓ Innovation and commercialisation.
- With National Programme on AI in place and a National Data Governance Framework Policy (NDGFP), India highlighted its commitment to efficient use of AI for catalyzing innovation ecosystem around AI.
- The NDGFP aims to ensure equitable access to non-personal data and focus on improving the institutional framework for government data sharing, promoting principles around privacy and security by design, and encouraging the use of anonymization tool.

#### **What is GPAI?**

- It was launched in June, 2020, with fifteen members.
- The Global Partnership in Artificial Intelligence is described as the 'fruition of an idea developed within the G7.'
- It is a multi-stakeholder initiative on artificial intelligence (AI), which aims to fill what it describes as 'the gap between theory and practice on AI,' by supporting cutting-edge research, as well as applied activities, on AI-related priorities.
- The initiative facilitates international cooperation on artificial technology by bringing together on a single platform, experts from fields such as science, industry, civil society, governments, international bodies, and academia.

#### **Members:**

- At present, GPAI has twenty-five member states:
- Australia, Belgium, Brazil, Canada, Czech Republic, Denmark, France, Germany, India, Ireland, Israel, Italy, Japan, Mexico, the Netherlands, New Zealand, Poland, the Republic of Korea (South Korea), Singapore, Slovenia, Spain, Sweden, the United Kingdom, the United States, and the European Union (EU).

#### **The founding members are:**

- Australia, Canada, France, Germany, India, Italy, Japan, Mexico, New Zealand, the Republic of Korea, Singapore, Slovenia, the UK, the US, and the EU.

#### **What is Artificial Intelligence?**

- It describes the action of machines accomplishing tasks that have historically required human intelligence.
- It includes technologies like machine learning, pattern recognition, big data, neural networks, self-algorithms etc.
- Example: Facebook's list of suggested friends for its users, self-driving cars, etc.
- AI automates processes and reduces human error but the principal limitation of AI is that it learns from the data. This means any inaccuracies in the data will be reflected in the results.

#### 7. **US Respect for Marriage Bill:**

- The US Senate recently passed the Respect for Marriage Bill.
- The US Respect for Marriage Bill aims to repeal the Clinton-era Defense of Marriage Act and require the states to recognize all legal marriages regardless of sex, race, ethnicity, or national origin.
- The Clinton-era Defense of Marriage Act provided the federal definition of "marriage" as only the legal union between a man and a woman as husband and wife and "spouse" as only an individual of the opposite sex who is a husband or wife.
- The new bill replaces these provisions and also repeals the provisions that do not require states to recognize same-sex marriages from other states or deny full claims to unions based on sex, national origin, race, or ethnicity.
- The bill also allows the Justice Department to enforce civil actions and establish a private action for violation.

#### 8. **Keen Sword Military Exercise:**

- Exercise Keen Sword is a joint and bilateral field training exercise between the US military and the Japan Self-Defence Force.
- It is held once in two years to boost the preparedness and interoperability between the military personnel of Japan and the United States.
- This biennial exercise has been held since 1986.
- This exercise provides opportunities for the US military and the JSDF to train together across various mission areas in realistic scenarios.
- Its ultimate goal is to build credible deterrence amid growing Chinese aggression in the region.
- It aims to create comprehensive scenarios to challenge the critical capabilities required to support the security of Japan and the stability of the Indo-Pacific.

#### **Significant:**

- The exercise comes amid the Chinese military's growing presence near Taiwan, the neighbouring country of Japan. Also, the Chinese vessels are continuously trespassing into the Japanese territorial waters close to the Senkaku Islands in the Indo-Pacific. The Senkaku Islands are Japanese-controlled, uninhabited islands in the East China Sea. China is currently claiming that these islands are part of its territory.

#### 9. **New Entrants to Agreement on Port State Measures (PSMA):**

- Four African countries recently backed the Food and Agricultural Organization's (FAO) Agreement on Port State Measures (PSMA). With this, the number of signatories to the PSMA has risen to 100.

- The Agreement on Port State Measures (PSMA) is the first internationally binding instrument that specifically aims to prevent and eliminate illegal, unreported and unregulated (IUU) fishing by denying port access to foreign vessels that are engaged in or supporting such practices. The Agreement came into force in June 2016.

**The IUU fishing refers to fishing or fishing-related activities that are:**

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- Against national, regional and international laws
- Non-reporting, misreporting or underreporting of information on fishing operations and their catches
- Fishing aboard stateless vessels
- Non-party vessels fishing in areas that are under the mandate of the regional fisheries management organizations.
- Fishing activities that are not regulated by the government and cannot be monitored.
- One in every five fish caught across the world every year originates from IUU fishing. The IUU fishing is responsible for the loss of over 11 to 26 million tonnes of fish each year, having economic value of 10 billion to 23 billion USD.
- Sustainable fishing is required to maintain the fish stock and preserve the environment and livelihoods of communities that rely on fishing activities.
- The 2030 SDG goals mandate the effective regulation of fishing and the elimination of overfishing, IUU fishing and destructive fishing practices by 2020. This target was never achieved.
- Therefore, the implementation of the PSMA is one of the cost effective ways to bring down IUU fishing instances.

**10. France ends Operation Barkhane:**

- Recently, French President Emmanuel Macron announced the end of the decade-long Operation Barkhane in Africa.
- France President Mr. Macron said that, "Our military support for African countries will continue, but according to new principles that France have define with them."

**What is Sahel Region?**

- The Sahel is the ecoclimatic and biogeographic realm of transition in Africa between the Sahara to the north and the Sudanian savanna to the south.
- Having a semi-arid climate, it stretches across the south-central latitudes of Northern Africa between the Atlantic Ocean and the Red Sea.
- The name is derived from the Arabic term for "coast, shore"; this is explained as being used in a figurative sense in reference to the southern edge of the vast Sahara.
- The Sahel part includes from west to east parts of northern Senegal, southern Mauritania, central Mali, northern Burkina Faso, the extreme south of Algeria, Niger, the extreme north of Nigeria, the extreme north of Cameroon and the Central African Republic, central Chad, central and southern Sudan, the extreme north of South Sudan, Eritrea and the extreme north of Ethiopia.

**What is Operation Barkhane?**

- France began its military operations in Sahel in January 2013. Titled Operation Serval, it was limited to targeting Islamic extremists linked to al-Qaeda who took control of northern Mali.
- However, in 2014, the mission was scaled up, renamed Operation Barkhane and was aimed at counter-terrorism. The objective was to assist local armed forces to prevent the resurgence of non-state armed groups across the Sahel region.
- Around 4,500 French personnel were deployed with the local joint counter-terrorism force.



#### 11. Indonesia Just Energy Partnership:

- Indonesia Just Energy Transition Partnership (JETP) was launched at the G20 Summit's side event Partnership for Global Infrastructure and Investment (PGII).
- **Indonesia Just Energy Transition Partnership (JETP)** is a long-term political agreement between the Indonesian Government and International Partners Group (IPG), with the US and Japan as joint leads, along with the United Kingdom, Germany, France, the European Union, Canada, Italy, Norway, and Denmark.
- Indonesia is among the world's top 10 greenhouse gas emitters. The JETP will help the country to achieve an accelerated shift from fossil fuel dependence to renewable energy sources. It seeks to minimise emissions from power sector, phase down coal usage and create a strategy based on expansion of renewable energy.
- The agreement seeks to achieve this energy transition in a manner that will not adversely affect the workers, communities and societal groups. This will deliver enhanced climate action, boost economic growth, generate skilled jobs, bring down pollution and create a prosperous future for Indonesians. It will also strengthen political commitment to phase down coal-fired power in the medium term.

#### 12. East Timor to become 11th member of ASEAN:

- The ASEAN members agreed in principle to admit East Timor as the 11th member of the bloc.
- The Association of Southeast Asian Nations (ASEAN) is a regional bloc founded on August 8, 1967 in Bangkok, Thailand. Its member states are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. East Timor was added as a new member of this regional grouping.

#### About East Timor:

- Timor Leste or East Timor is a half-island nation in the eastern Lesser Sunda Islands. It is situated at the southern extreme of the Malay Archipelago. It occupies the eastern half of the Island of Timor. It is bounded by the Timor Sea to the southeast, the Wetar Strait to the north, the Ombai Strait to the northwest and the western Timor (part of Indonesian territory) to southwest.

- East Timor that was previously part of Indonesian territory. Indonesia occupied the island nation in 1976. Hundreds of thousands have died on the island while resisting the annexation of Indonesia. Due to the global pressure, the Indonesian government authorized a referendum in 1999 to determine future of East Timor. In the UN-supervised referendum, the country voted to secede from Indonesia. It was recognized by the United Nations in 2002. This makes it the youngest democracy in Asia.

### **13. 5th Edition of Paris Peace Forum:**

- Recently, the fifth edition of the Paris Peace Forum was organized.
- The Paris Peace Forum is a French non-profit organization established in 2018. It hosts annual gathering of world leaders and heads of international organizations as well as leaders from civil society and private sector from across the world. The goal of the annual event is not to directly address international conflicts but to offer an international arena for initiating dialogue between a multitude of both private and civil society actors. Each year, the forum showcases projects that provides concrete and effective solutions to governance challenges.
- It completes the existing world agenda of multilateral gathering by specifically focusing on global governance-related issues. Economic and financial issues are dealt at the World Economic Forum in Davos (Switzerland) and security issues at the Munich Security Conference.

#### **About the fifth edition of Paris Peace Forum**

- The fifth edition of the Paris Peace Forum was organized based on the theme “Riding out the multicrisis”.
- It focuses on:
  - ✓ Providing solutions for ways to overcome the socio-economic consequences of multiple crisis
  - ✓ Developing international cooperation on major issues
  - ✓ Support multilateralism and strengthen global cooperation mechanisms
  - ✓ Multicrisis that were focused on during this gathering are war in Ukraine, global hunger crisis, environmental crisis and inflation. Latin America was also part of the agenda.
  - ✓ Over 4,000 individuals, including world leaders, humanitarians and business figures participated in this event.
  - ✓ The main emphasis was given to the crises caused by the Ukrainian conflict, including energy crisis in Europe and food insecurity in southern hemisphere.
  - ✓ World leaders called for the immediate end to the conflict during the event.
  - ✓ Other focus areas of the event included rethinking of globalization, fostering inclusive and just societies, promoting climate and environmental solutions and building a more ethical and safe digital world.

## Defence & Security

### 1. Survey Vehicle Ikshak:

- 'Ikshak', the third of the four Survey Vessels (Large) (SVL) Project, being built by GRSE/L&T for Indian Navy was launched at Kattupalli, Chennai.

#### In Details:

- The ship has been named 'Ikshak' which means 'Guide'.
- The ship has been named to signify the contribution of the Survey ships towards facilitating safe passage for Mariners at Sea.
- SVL ships will replace the existing Sandhayak Class survey ships with new generation hydrographic equipment to collect oceanographic data.
- The hull of these ships is made from indigenously developed DMR 249-A steel manufactured by Steel Authority of India Limited.
- With a capability to carry four Survey Motor Boats and an integral helicopter, the primary role of the ships would be to undertake full scale coastal and deep-water hydrographic surveys of Ports and navigational channels.
- The ships would also be deployed for collecting oceanographic and geophysical data for defence as well as civil applications.
- In their secondary role, the ships are capable of providing limited defence, besides serving as Hospital ships during emergencies.
- The Survey Vessels Large will have over 80% indigenous content by cost.

### 2. Austra Hind 22:

- The bilateral training exercise "Austra Hind 22" was recently held between contingents of the Indian Army and the Australian Army at Mahajan Field Firing Ranges, Rajasthan.
- This is the first exercise in the series of Austra Hind with participation of all arms and services contingent from both armies.
- It will be a yearly event that will be conducted alternately in India and Australia.
- It aims to build positive military relations, imbibe each other's best practices and promote the ability to operate together while undertaking multi-domain operations in Semi deserts terrain under a UN peace enforcement mandate.

#### Participation:

- The Australian Army contingent comprising soldiers from the 13th Brigade of the 2nd Division has arrived at the exercise location.
- The Indian Army is represented by troops from the DOGRA Regiment.
- Other Military Exercises with Australia:
  - a. Ex AUSINDEX
  - b. EX PITCH BLACK

#### Other Indian Military Exercises:

- Sampriti - Bangladesh
- Mitra Shakti - Sri Lanka
- Maitree Exercise - Thailand
- Vajra Prahar - USA
- Yudh Abhyas - USA
- Nomadic Elephant - Mongolia

- Garuda Shakti - Indonesia
- Shakti Exercise - France
- Dharma Guardian - Japan
- Surya Kiran - Nepal
- Hand in Hand Exercise - China
- SIMBEX - Singapore
- Shakti Exercise - France
- CORPAT - Thailand

### 3. Garuda Shakti Exercise:

- Indian Army Special Forces and Indonesian Special Forces are participating in the eighth edition of the bilateral military exercise 'Garuda Shakti' at Karawang, Indonesia that commenced on 21 November 2022.
- It aims at enhancing understanding, cooperation and interoperability between the Special Forces of both armies.
- Significance:
  - The joint exercise will facilitate both armies to know each other better, and share their wide experiences and combat experience on countering terrorist operations, Regional Security Operations & Peace Keeping Operations in an international environment.
  - The exercise is yet another significant milestone in ensuring cordial relations between the two countries and another step forward towards ensuring regional security.

### 4. Exercise Sea Vigil-22:

- The third edition of 'Sea Vigil-22' is all set to commence on the eastern seaboard as part of the nation-wide coastal defence exercise from November 15.
- It was conceptualised in 2018 to validate various measures that have been instituted towards enhancing maritime security since the 26/11 Mumbai attack.
- The exercise is being conducted by the Indian Navy in coordination with the Indian Coast Guard (ICG) and the Ministries entrusted with the task of maritime activities.
- This exercise is a build-up towards the major Theatre Level Readiness Operational Exercise (TROPEX), which is conducted by the Indian Navy every two years.
- This exercise will be undertaken along the 7,516 km coastline of the country, covering the Exclusive Economic Zone (EEZ) of India.

#### Relevance:

- Sea Vigil and TROPEX together will cover the entire spectrum of maritime security challenges.
- Sea Vigil provides the opportunity at the apex level to assess the preparedness in the domain of maritime security and coastal defence.
- The Sea Vigil-22 will provide a realistic assessment of strengths and weaknesses to strengthen maritime and national security further.

## Geography

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### 1. Mauna Loa Volcano:

- Mauna Loa, the largest active volcano in the world, may erupt in the near future.
- Mauna Loa is one of five volcanoes that together make up the Big Island of Hawaii.
- It is the southernmost island in the Hawaiian archipelago.
- It's not the tallest (that title goes to Mauna Kea) but it's the largest and makes up about half of the island's land mass.
- It sits immediately north of Kilauea volcano, which is currently erupting from its summit crater.
- Kilauea is well-known for a 2018 eruption that destroyed 700 homes and sent rivers of lava spreading across farms and into the ocean.
- Mauna Loa last erupted 38 years ago

### Recently Erupted Other Volcanoes:

- Sangay Volcano: Ecuador
- Taal Volcano: Philippines
- Mt. Sinabung, Merapi volcano, Semeru volcano (Indonesia)
- Volcanoes in India:
  - Barren Island, Andaman Islands (India's only active volcano)
  - Narcondam, Andaman Islands
  - Baratang, Andaman Islands
  - Deccan Traps, Maharashtra
  - Dhinodhar Hills, Gujarat
  - Dhosi Hill, Haryana

### 2. Volcanic Activities in Kamchatka Peninsula:

- Two volcanoes in the Kamchatka Peninsula erupted recently. They are among the six volcanoes in the northeastern part of Russia that are currently showing signs of increased activity.
- About Kamchatka Peninsula





- The Kamchatka Peninsula is part of the “Ring of Fire” – a region along the path of the Pacific Ocean that is characterized by active volcanoes and frequent earthquakes.
- This peninsula extends into the Pacific Ocean some 6,600 km east of Moscow.
- It is among the world’s most concentrated areas of geothermal activity.
- This peninsula hosts 29 active volcanoes, most of which are surrounded by sparsely populated forest and tundra.
- Though these volcanoes pose little threat to the local population, major eruptions can spew glass, rock and ash into the sky, threatening air travel.
- The town of Klyuchi, with some 5,000 people, is situated between two volcanoes that erupted recently.
- These volcanoes are some 450 km from the Kamchatka Peninsula’s only major city – the Petropavlovsk-Kamchatsky.



#### **Klyuchevskaya Sopka:**

- The Klyuchevskaya Sopka is a stratovolcano in Kamchatka Peninsula. It is the highest mountain in Siberia and Eurasia’s highest active volcano. It is part of the natural Volcanoes of Kamchatka UNESCO World Heritage Site. It appeared some 7,000 years ago. The first recorded eruption of this volcano happened in 1697. Since then, it has remained almost continuously active like many of its neighbouring volcanoes. Recently, it recorded as many as 10 explosions per hour.
- Shiveluch volcano
- Shiveluch volcano is currently under high activity and a powerful explosion is forecasted. It is Russia’s most active volcano and one of the largest in the Far East. It has been erupting since August 1999, with occasional powerful explosion events.
- **Shiveluch has 2 main parts-Old Shiveluch (3,283 metres-tall) and Young Shiveluch (2,800 meters tall).** Young Shiveluch is situated within an ancient caldera – a large crater-like basin that may have been formed when the older part erupted some 10,000 years ago. It is this part that has been extremely active. Its lava dome is continuing to grow and experiencing stronger “fumarole activity”.
- Domes are mounds are formed from accumulating lava and fumaroles are openings through which high sulfurous gas are emitted.

#### **3. Warming Arctic Ocean Increasing Snowfall in Siberia:**

- Some parts of northern Eurasia have been witnessing increased snow cover over the past decades, even as rising air temperatures are already melting glaciers and polar ice caps in an interesting paradox.
- The climate change-induced melting of ice in the Arctic Ocean could be responsible for an increase in snow cover in Siberia.
- Enhanced evaporation deposits more moisture in the Arctic atmosphere.

- The Arctic has warmed nearly four times faster than the rest of the world over the past 43 years.
- The most impacted were Barents, Kara, Chukchi and East Siberian Seas.
- These areas experienced sea ice loss in recent decades.
- The researchers recorded a high concentration of Arctic moisture, especially in August. This, according to them, corresponded with years of strong southward-moving moisture.
- These weather events pick up unusually large quantities of moisture south and transport them into Siberia.

#### Significance of the study:

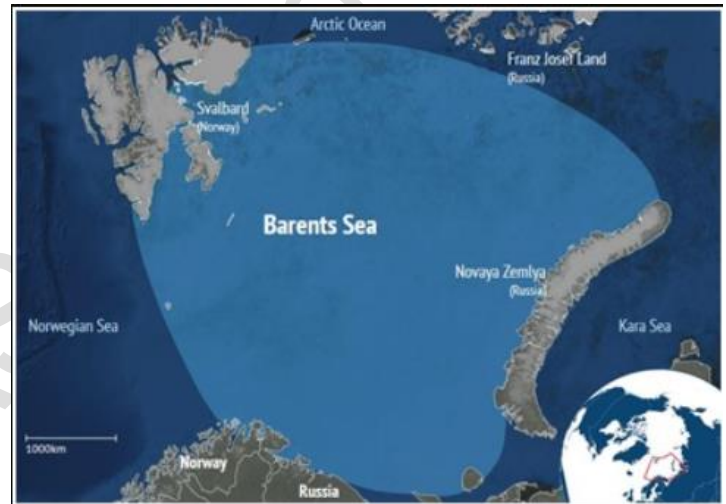
- This study can help improve predictions of abnormal weather events such as heatwaves, which increase the risk of forest fires.
- Increased snow cover in western Russia increased the risk of summer heat waves in Europe and Northeast Asia.

#### Barent sea:

- The Barents Sea borders the Norwegian and Greenland Sea in the west, the Arctic Sea in the north and the Kara Sea in the east.
- The Barents Sea is divided between Russia and Norway as defined by the United Nations Convention on the Law of the Sea (UNCLOS).

#### What is Atlantification?

- Scientists have discovered 'hotspots' where some parts of the Barents Sea have started to closely resemble the Atlantic. This phenomenon has been termed Atlantification.
- The north-flowing ocean currents transport the warm waters of the Atlantic into the Arctic Ocean through the Barents Sea.
- Unlike the Atlantic and Pacific, the upper waters of the Eurasian Arctic Ocean get warmer as they get deeper.
- The top of the ocean is typically covered by sea ice. Below this is a layer of cool freshwater, followed by a deeper layer of warmer, saltier water delivered to the Arctic from the Atlantic by ocean currents.
- According to NASA data, the total area covered by sea ice in this region has fallen by almost half since satellite records began in the early 1980s.
- One possible reason for this is that, when sea ice melts through the summer, it replenishes the freshwater layer that sits above the warmer Atlantic layer. With less sea ice around, the amount of freshwater dwindles, this, in turn, causes the ocean to mix together, drawing more Atlantic heat up towards the surface. This "Atlantification" can, in turn, cause more ice to melt from below.
- Human-caused global climate change has been accelerating the Atlantification process and this will in turn significantly affect the weather patterns, ocean circulations, and the entire Arctic ecosystem.



### What will be the Consequences of the Warming?

- ✓ More extreme weather
- ✓ Melting of More Ice
- ✓ First Recorded Rainfall at Summit Station Greenland
- ✓ Increase in Lightning strikes
- ✓ Impact on Marine Ecosystem
- ✓ Extreme Snowfall
- ✓ Extreme Weather Events
- ✓ Arctic jet stream becomes wavier and less impactful

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#### **4. Panantza-San Carlos Mining Project:**

- ✓ The Ecuadorian Constitutional Court had halted the Panantza-San Carlos mining project in a ruling that favored an indigenous community's rights to choose which activities can happen on their territories.

#### **Panantza-San Carlos mining project:**

- The Panantza-San Carlos copper mining project is an open pit mine spanning 38,548 hectares of land in the southern Ecuadorian Amazon.
- This 3 billion USD project was expected to generate some 40 billion USD in export revenue of the next decade.
- This project was funded by the Chinese mining company ExplorCobres SA.
- It was part of the Ecuadorian government's push to become Andean mining power rivaling countries like Chile and Peru.
- Due to this project, indigenous people were forcefully evicted and displaced from their homes in Nankints.
- It was opposed by the Shuar Arutam people, who held that they were not consulted properly by the government to implement this project.
- Some 70 per cent of the Shuar Arutam people's territory is under concession for this project. This will impact 47 community centers and some 1,200 families.
- Zamora River and the Coangos River – the tributaries of Santiago River – cross part of this project. They are at a risk of contamination because of this project.

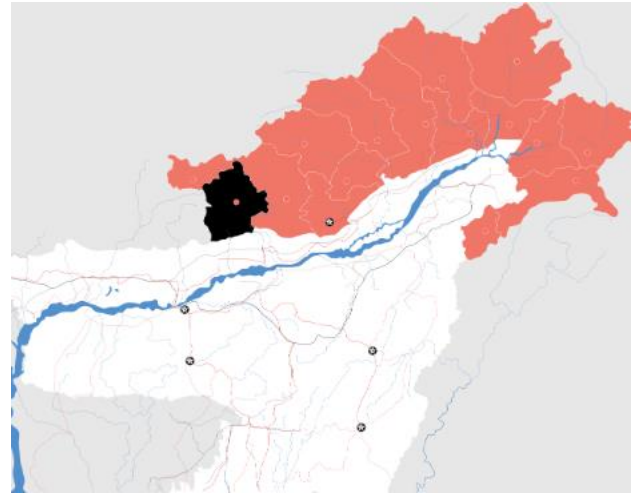


## 5. Kameng Hydropower Station:

- Prime Minister Shri Narendra Modi dedicated the 600 MW Kameng Hydro Power Station in Arunachal Pradesh.

### In Details:

- It is the biggest Hydro Power Project implemented by NEEPCO Ltd., a Mini Ratna Power PSU under Ministry of Power.
- 600 MW Kameng Hydro Power Station in Arunachal Pradesh will be a major step towards fulfilling Nationally Determined Contribution (NDC) of the Govt. of India.
- The project will form part of projected hydro capacity addition of 30000 MW by 2030.
- This will make Arunachal Pradesh a power surplus state with huge benefits to the National Grid in terms of grid stability and integration and balancing of solar and wind energy sources in the grid.



## 6. "Coronal holes" Phenomenon on the Sun:

- Recently, NASA captured an image having dark patches on the sun's surface resembling eyes and a smile.
- These patches are called 'Coronal holes', which can be seen in ultraviolet light but are typically invisible to our eyes.
- These are regions on the sun's surface from where fast solar wind gushes out into space.
- In these regions, the magnetic field is open to interplanetary space, sending solar material out in a high-speed stream of solar wind i.e. geomagnetic storm.
- They have lower temperatures and appear much darker than their surroundings as they contain little solar material.
- Coronal holes can last between a few weeks to months.
- The holes are not a unique phenomenon, appearing throughout the sun's approximately 11-year solar cycle.
- They can last much longer during solar minimum, a period of time when activity on the Sun is substantially diminished.

### Significance:

- Coronal Holes are important in understanding the space environment around the earth through which our technology and astronauts' travel.

### What is a Geomagnetic Storm?

- Geomagnetic storm is a solar storm that occurs during the release of magnetic energy associated with sunspots ('dark' regions on the Sun that are cooler than the surrounding photosphere - the lowest layer of the solar atmosphere), and can last for a few minutes or hours.
- It is a major disturbance of Earth's magnetosphere that occurs when there is a very efficient exchange of energy from the solar wind into the space environment surrounding Earth.

- The magnetosphere shields our home planet from harmful solar and cosmic particle radiation, as well as erosion of the atmosphere by the solar wind – the constant flow of charged particles streaming off the Sun.
- These storms result from variations in the solar wind that produce major changes in the currents, plasmas, and fields in Earth's magnetosphere.
- The largest storms that result from these conditions are associated with solar Coronal Mass Ejections (CMEs) where a billion tons or so of plasma from the sun, with its embedded magnetic field, arrives at Earth.
- CMEs are large ejections of plasma and magnetic fields that originate from the Sun's corona (outermost layer).

#### 7. State of the Climate in Asia 2021 Report:

- Recently, the State of the Climate in Asia 2021 report was published by the World Meteorological Organization and the UN Economic and Social Commission for Asia and the Pacific (ESCAP).
- Floods and storms accounted for 80% of the natural disasters that struck Asia in 2021.
- Asian countries incurred financial losses worth USD 35.6 billion in 2021 because of natural disasters. Flooding was the event with “by far the greatest impact in Asia in terms of fatalities and economic damage.”
- This showed that the economic impact of such disasters is on the rise compared to the average of the last twenty years.
- India suffered a total loss of USD 3.2 billion from flooding and the country faced heavy rains and flash floods during the monsoon season between June and September 2021.
- These events resulted in about 1,300 casualties and damaged crops and properties.
- The country was only second to China in the Asian continent in this regard.
- Similarly, storms also caused significant economic damage, especially in India (USD 4.4 billion), followed by China (USD 3 billion) and Japan (USD 2 billion).
- During 2021, India experienced five cyclonic storms (Tauktae, Yaas, Gulab, Shaheen, Jawad) with maximum sustained wind speeds of  $\geq 34$  knots.
- Additionally, in 2021, thunderstorms and lightning claimed around 800 lives in different parts of the country.

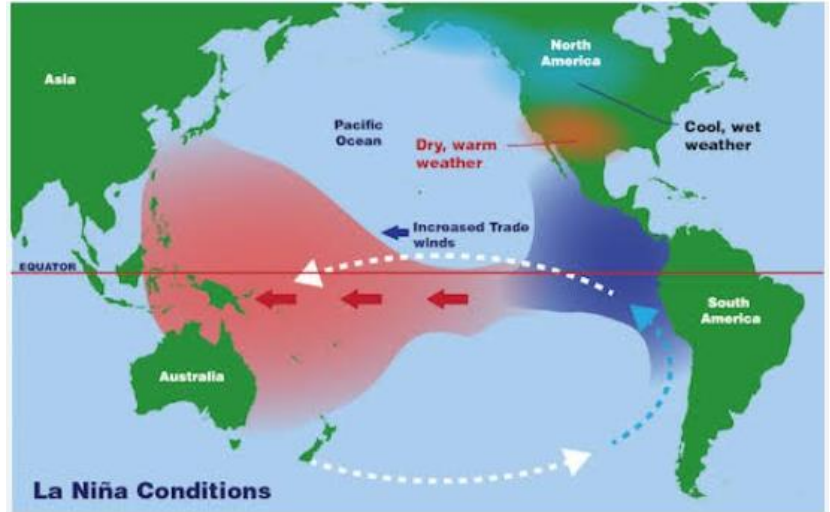
#### What are the Reasons for these Disasters?

##### Arabian Sea and Kuroshio Current's Rapid Warming:

- ✓ Due to the Arabian Sea and Kuroshio Current's rapid warming, these regions are warming three times faster than the average global upper-ocean temperature.
- ✓ Ocean warming could contribute to sea level rise, alter storm paths and ocean currents and increase stratification.
- ✓ Upper-ocean warming is important because it directly affects the atmosphere in terms of convection, winds, cyclones and so on.
- ✓ The deep ocean does not affect the atmosphere directly.
- ✓ The Arabian Sea is unique because it has pathways to receive excess heat through atmospheric tunnels and bridges and mixed warm water from various oceans is pumped into it.
- ✓ But in the case of the Kuroshio Current system, the current system takes warm water from the tropics and stronger winds force more heat into the current.

**La Nina:**

- The last two years were also La Nina years and during this time, the pressure patterns set up in India go from North to South, which drives circulations from Eurasia and China.
- This can cause excessive rainfall patterns over parts of India, particularly in the Southern Peninsular, which gets the Northeast monsoon. The excess last year was related to the La Nina pressure pattern.

**History, Art and Culture****1. Chhatrapati Shivaji Maharaj Vastu Sangrahalaya:**

- Recently, Chhatrapati Shivaji Maharaj Vastu Sangrahalaya (CSMVS) was conferred with the 'Award of Excellence' at the United Nations Educational, Scientific and Cultural Organisation (UNESCO) Asia-Pacific Awards for Cultural Heritage Conservation-2022

**In Details:**

- The UNESCO Asia-Pacific Awards for Cultural Heritage Conservation is supported by a partnership between UNESCO and Ng Teng Fong Charitable Foundation since 2021.
- Since 2000, the UNESCO Asia-Pacific Awards for Cultural Heritage Conservation programme has been recognizing the efforts of private individuals and organizations in restoring, conserving, and transforming structures and buildings of heritage value in the region.
- The complete list of 2022 awarded projects comprises:
- Award of Excellence: Chhatrapati Shivaji Maharaj Vastu Sangrahalaya Museum, Mumbai, India
- Award of Distinction: Stepwells of Golconda, Hyderabad, India, Zarch Qanat, Yazd, Iran , Neilson Hays Library, Bangkok, Thailand
- Award of Merit: Topdara Stupa, Charikar, Afghanistan, Nantian Buddhist Temple, Fujian, China , Domakonda Fort, Telangana, India, Byculla Station, Mumbai, India, Sadoughi House, Yazd, Iran , 25 Chivas in Kathmandu, Nepal

**2. Taklung Setrunga Rinpoche:**

- Recently, the Nyingma sect has identified a boy from Spiti in Himachal Pradesh as the reincarnation of the late Taklung Setrunga Rinpoche, a scholar known for his knowledge of Tibetan Tantric school.

**In details:**

- The Nyingma sect of Tibetan Buddhism is the oldest amongst the four schools and the second largest after Gelugpa sect.
- Nyingma in Tibetan means “ancient” and has roots going back to the 8th century when the indigenous Bon religion was strongly adhered to by Tibetans.
- The Nyingma sect is also known as the Red Hat sect because its Lamas wear red robes and hats.
- Its teachings are mainly based on those of Padmasambhava, called Guru Rinpoche and Shantarakshita who were brought to Tibet through the rule of the Emperor Trisong Detsen from 742 to 797 CE.
- Taklung Setrunga Rinpoche was a profound scholar renowned for his expertise in Tibetan Tantric school.
- History of Nyingma School:
- In the 7th century, Buddhism found its way to Tibet when the Tibetan King, Songtsen Gampo, married the Chinese Princess, Wen Cheng.
- The Princess had brought along her Buddha statue which is today preserved at Jokhang Temple in Lhasa.
- Later on in the 8th century, when Tibetans preferred their Bon religion, the King, on advice of the scholar-monk Master Shantarakshita, brought the great Padmasambhava to drive away the demons hampering the introduction of Buddhism in Tibet.
- By the middle of the 9th century, Buddhism was widely spread in the region.
- A large collection of Buddhist scriptures were translated into Tibetan and the Samye Monastery was built around 779 CE. Up to the 11th century, Nyingma was the sole sect of Buddhism in Tibet.
- It is the only sect in Tibetan Buddhism that did not assume political power.

#### **Teachings of the Nyingma Sect:**

- Buddhist teachings are classified into nine yanas with ‘Dzogchen’ being most important.
- Dzogchen (Great Perfection) philosophy revolves around pure awareness which can be achieved through meditation and learned from a Dzogchen master.
- This Vajrayana tradition involves use of ritual, symbols and tantric practices to achieve nirvana.
- Therefore Nyingma stresses on teachings attributed to Padmasambhava, the Dzogchen doctrines as well as Tantric practices.
- The Nyingma School is also associated with Termas (hidden treasures).
- When Buddhism was declining during the rule of king Langdarma, Padmasambhava and his disciples hid numerous scriptures, ritual objects and relics in caves and rocks on mountains.
- Over time, when they were discovered by Tertons (treasure revealers) either physically or revealed to their mind (Mind Terma), the teachings were compiled into Rinchen Terdzo, a multi-volume book.

#### **3. Manipur Sangai Festival:**

- Recently the Prime Minister of India addressed the Manipur Sangai Festival via video message.
- The festival is named after the state animal, Sangai, the brow-antlered deer found only in Manipur.

- Sangai festival is an annual cultural festival organised by Manipur Tourism Department every year.
- Many editions of this Festival has been celebrated over the past few years with the name of Tourism Festival, since 2010 this has been renamed as the Sangai Festival.
- This festival is being celebrated to promote Manipur as a world class tourism destination.
- It showcases the states contributions to:
  - ✓ art and culture,
  - ✓ handloom,
  - ✓ handicrafts,
  - ✓ fine arts,
  - ✓ indigenous sports,
  - ✓ cuisine,
  - ✓ music and adventure sports,
  - ✓ natural environment.

#### 4. 60th Anniversary of the Battle of Rezang La:

- November 18 marks the 60th anniversary of the Battle of Rezang La.
- In 1962, the Charlie Company (C Company) of the 13th battalion of the Kumaon Regiment fought against the Chinese attack at the Rezang La Pass in Ladakh.
- The C Company, led by Maj. Shaitan Singh, had 117 soldiers. Of these, 110 were martyred during this battle.
- The 13th battalion was responsible for the defence of Chushul. Its C Company commanded by Major Shaitan Singh was entrusted with the security of the Rezang La.
- While the C Company, having three platoons stationed across a 2-km frontage, was well-entrenched and reasonably well-equipped, it did not have mines and the overhead shelter for the command posts was insufficient in sub-zero temperature.
- Many of the Indian soldiers lost their lives to the freezing temperature during this battle.
- Major Shaitan Singh was also martyred after being wounded by the Chinese firing. He was honoured with Param Vir Chakra, making him the second army man to receive the highest gallantry award.
- Several other men in the C Company also received Vir Chakra posthumously.

#### About Rezang La:

- Rezang La, also known as Rechin La, is a mountain pass on the Line of Actual Control (LAC) between Indian-administered Ladakh and the Chinese administered Spanggur Lake basin, which is also claimed by India. It is situated on the eastern watershed ridge of the Chushul Valley that is being claimed by China.
- This 16,000-foot-high feature is a narrow gap between the even higher mountains around the strategically-significant Chushul village and the Spanggur Lake, which span across both the Indian and Chinese territories. The defence of this strategically important mountain pass is critical for the security of Chushul. Anyone who can pass through the Rezang La will have a free run to Leh. During the 2020-21 China-India skirmishes, this mountain pass was again a site of conflict between India and China.

#### 5. Baliyatra:



- Recently, the Prime Minister in his address to the Indian diaspora in Bali on the sidelines of the G20 summit mentioned the annual Baliyatra on the banks of the Mahanadi in Cuttack that commemorates age-old links between ancient Kalinga and Southeast Asia.
- Baliyatra of year 2022 also found a place in the Guinness World Records for achieving an impressive feat of origami, the creation of beautiful paper sculptures.
- Baliyatra, literally 'voyage to Bali' is one of the country's largest open-air fares.
- Baliyatra is a week-long event which begins on Kartik Purnima (full moon night in the month of Kartik).

#### Historical/Cultural Significance:

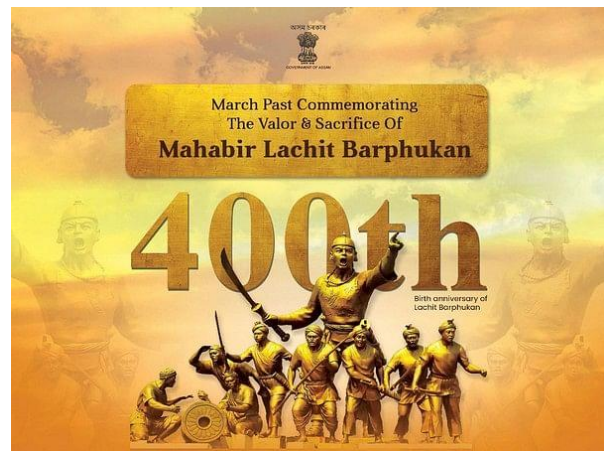
- It is organised every year to commemorate the 2,000-year-old maritime and cultural links between ancient Kalinga (today's Odisha) and Bali and other South and Southeast Asian regions like Java, Sumatra, Borneo, Burma (Myanmar) and Ceylon (Sri Lanka).
- According to historians, popular items of trade between Kalinga and Southeast Asia included pepper, cinnamon, cardamom, silk, camphor, gold, and jewellery.
- The Bali Yatra celebrates the ingenuity and skill of those expert sailors who made Kalinga one of the most prosperous empires of its time.

#### How is Kalinga linked with Southeast Asia?

- Origin – Growth of Ports: The Kalinga Empire (present-day Odisha) is known for its glorious maritime history. Due to the geographical location of Kalinga, this area saw the growth of ports as early as the 4th and the 5th century BC.
- Some of the famous ports, Tamralipti, Manikpatna, Chelitalo, Palur and Pithunda allowed India to connect with other countries via the sea. Soon, the Kalingas had trade links with Srilanka, Java, Borneo, Sumatra, Bali and Burma.
- Bali formed a part of the four islands that were collectively called the Suvarnadvipa, today known as Indonesia.

#### 6. 400th Birth Anniversary of Lachit Barphukan:

- Recently, Assam CM launched an event for the 400th birth anniversary celebration of the Lachit Barphukan.
- Lachit Borphukan, born on November 24, 1622, was a commander and Bophukan (councillor) in the Ahom Kingdom, which reigned present-day Assam for over 600 years while successfully resisting the Mughal Empire.



#### Battle of Alaboi (1669):

- In 1669, Aurangzeb dispatched the Rajput Raja Ram Singh I to recapture territories won back by the Ahoms.
- The battle of Alaboi was fought between the Ahom armed force and Mughals trespassers on August 5, 1669 in the Alaboi Hills near Dadara in North Guwahati.

#### Battle of Saraighat (1671):

- The battle of Sarai Ghat was one of the most significant warfares in medieval India.

- The Battle of Saraighat was a naval battle fought in 1671 between the Mughal Empire (led by the Kachwaha king, Raja Ram Singh I), and the Ahom Kingdom (led by Lachit Borphukan) on the Brahmaputra river at Saraighat, Guwahati, Assam.
- Although weaker, the Ahom Army defeated the Mughal Army by brilliant uses of the terrain, clever diplomatic negotiations to buy time, guerrilla tactics, psychological warfare, military intelligence and by exploiting the sole weakness of the Mughal forces (navy).
- The Battle of Saraighat was the last battle in the last major attempt by the Mughals to extend their empire into Assam.
- Though the Mughals managed to regain Guwahati briefly later after a Borphukan deserted it, the Ahoms wrested control in the Battle of Itakhuli in 1682 and maintained it till the end of their rule.

#### **Ahom Kingdom:**

- The Ahom dynasty (1228–1826) ruled the present-day Assam, India for nearly 598 years.
- The dynasty was established by Sukaphaa, a Shan prince of Mong Mao who came to Assam after crossing the Patkai Mountains.
- The rule of this dynasty ended with the Burmese invasion of Assam and the subsequent annexation by the British East India Company following the Treaty of Yandabo in 1826.
- In external medieval chronicles the kings of this dynasty were called Asam Raja, whereas the subjects of the kingdom called them Chaopha, or Swargadeo.

#### **7. Meghalaya: Wangala 100 drums Festival:**

- The opening ceremony of the Rising Sun Water Fest-2022 was conducted amidst the pristine surroundings of Umiam Lake (man-made reservoir) at Meghalaya.
- Members of the Garo tribal community perform Wangala dance on the occasion of 'The Rising Sun Water Fest-2022'.
- The Wangala is also known as the Festival of Hundred Drums and is celebrated with different forms of dances on the tunes of folk songs played on drums and primitive flute made of buffalo horns.
- The festival is celebrated in honour of the Sun God and marks the end of the long harvest season.
- The celebration also signifies the end of a long toil period in the field for the Garo tribe before the start of the winters.
- For the Garo Tribe in Meghalaya, the festival is a way to preserve and promote their cultural identity and they exhibit their tradition in their celebrations.

#### **Garo Community:**

- The Garos, who call themselves A'chiks, are the second largest tribe in Meghalaya.
- The other two major tribes of Meghalaya are the Khasi People and the Jaintia tribe.
- The Garos have a strong tradition that they have come from Tibet. They have a number of dialects and cultural groups. Each of them originally settled at a particular area of the Garo Hills and outlying plain lands.
- However, the culture of the modern Garo community has been greatly influenced by Christianity. Nokpantes are the glory of the past and all children are given equal care, rights and importance by modern parents.

- The Garo marriage is regulated by two important laws, viz., Exogamy and A'Kim according to the belonging to the same clan. Marriages are not allowed within the same clan.
- According to the law of A'Kim, a man or a woman who has once contracted marriage will never be free to remarry person of another clan, even after the death of his/ her spouse.
- The Garos are one of the few remaining matrilineal societies in the world.
- The individuals take their clan titles from their mothers. Traditionally, the youngest daughter inherits the property from her mother.
- Sons leave the parents' house at puberty, and are trained in the village bachelor dormitory (Nokpante). After getting married, the man lives in his wife's house. Garos are only a matrilineal society, but not matriarchal.

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