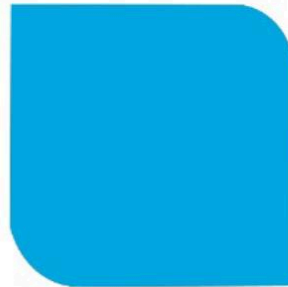


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- > **INDIA RANKS 134TH IN GLOBAL HUMAN DEVELOPMENT INDEX.**
- > **WHY INDIA MUST PUT AFRICA AT THE HEART OF ITS GLOBAL SOUTH VISION.**
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Mains Daily Analysis

General Studies-I

1. World Wastes 1 billion Meals a Day: UN Report

Why in News?

Households across the globe wasted over one billion meals a day in 2022, according to the Food Waste Index Report 2024.

About Food Waste Index Report:

- Started in 2021, the **Food Waste Index measures food waste at retail and consumer level** (households and food service).
- It is jointly authored by the **United Nations Environment Programme (UNEP)** and **WRAP (Waste and Resources Action Programme)**, a U.K.-based non-profit.
- **Objective:** To catalyze essential action towards reducing food waste and achieving UN's Sustainable Developmental Goal (**SDG 12.3**).
 - SDG 12 seeks to "ensure sustainable consumption and production patterns."
 - Target 12.3 calls for **cutting in half per capita global food waste at the retail and consumer level**, and reducing food losses along production and supply chains (including post-harvest losses) by 2030.
- The **report defines food waste as food and the associated inedible parts removed from the human food supply chain.**

Key Highlights of the Food Waste Index Report 2024:

- **In 2022, the world wasted 1.05 billion tonnes of food.**
 - This amounts to one fifth (19 per cent) of food available to consumers being wasted, at the retail, food service, and household level.
 - That is in addition to the **13 per cent of the world's food lost in the supply chain**, as estimated by FAO, from post-harvest up to and excluding retail.
- **Most of the world's food waste comes from households.**
 - Out of the total food wasted in 2022, households were responsible for 631 million tonnes equivalent to 60 percent, the food service sector for 290 and the retail sector for 131.
- **Households waste at least one billion meals a day.**
 - On average, **each person wastes 79kg of food annually.**
 - The equivalent of at least one billion meals of edible food is being wasted in households worldwide every single day, using a very conservative assessment on the share of food waste that is edible.
- **Temperature and Food Waste Correlation.**
 - Hotter countries appear to have more food waste per capita in households, potentially due to increased consumption of fresh foods with substantial inedible parts and lack of robust cold chain.
- **Urban-Rural Disparities.**
 - Middle-income countries display variations between urban and rural populations, with rural areas generally wasting less.
 - Possible explanations include **greater diversion of food scraps to pets, animal feed, and home composting in rural areas.**
 - The report recommends focusing efforts to strengthen food waste reduction and circularity in cities.
- **G20 Role in Food Waste Reduction.**

- Only four G20 countries (Australia, Japan, UK, and USA) and the European Union have food waste estimates suitable for tracking progress to 2030.
- An additional two G20 countries have suitable household estimates (Canada, Saudi Arabia), with Brazil's estimate expected late 2024.
- **Food waste must be addressed at both individual and systemic levels**, including targeted efforts in urban areas and international collaboration among countries and across supply chains.

United Nations Environment Programme:

- The UNEP was established in 1972 at the United Nations Conference on the Human Environment, popularly known as the **Stockholm Conference**, as it was held in Stockholm, Sweden.
- **Objective:**
 - To **provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.**
- It uses its expertise to strengthen environmental standards and practices while helping implement environmental obligations at the country, regional and global levels.
- **Six Areas of Concentration**
 - **UNEP re-organised its work programme into six strategic areas as part of its move to results-based management.**
 - Climate Change
 - Post-Conflict and Disaster Management
 - Ecosystem Management
 - Environmental Governance:
 - Harmful Substances - UNEP strives to minimise the impact of harmful substances and hazardous waste on the environment and human beings.
 - Resource Efficiency/Sustainable Consumption and Production:
- **Governing Body**
 - The **UN Environment Assembly is the governing body of the UNEP.**
 - It was created in 2012 to replace the governing council.
 - It **currently has 193 members** and meets every two years.
 - **Headquarters:** Nairobi, Kenya

2. A Cry for Students' Help, A Call for Reflection and Action

Context

- **The current socio-academic landscape** in India is facing challenges, **particularly concerning the well-being of its students.**
- The amalgamation of socio-economic shifts and academic pressures has led to a distressing trend of student suicides, **notably highlighted in instances such as the tragic fate of a teenager in Kota, Rajasthan.**
- As a result, **the multifaceted issues plaguing India's education system, factors contributing to student stress, institutional responses, societal expectations, and the urgent need for reform** need to be explored and implemented.

Factors Contributing to Pressure in Academic Pursuit and Students Suicide in Kota

- **High-Stakes Examinations**
 - Entrance examinations like the JEE and NEET are pivotal events in a student's academic journey, **with success or failure carrying significant consequences.**

- The intense competition and pressure to perform well in these exams often result in heightened levels of stress and anxiety among students.
- **The fear of not meeting societal expectations or failing to secure admission to prestigious institutions can drive students to extreme measures, including suicide.**
- **Parental and Societal Expectations**
 - India's education system is characterised by a culture of academic achievement, where success is often equated with social status and financial stability.
 - **Parents, influenced by societal norms, place immense pressure on their children to excel academically, sometimes at the expense of their mental health and well-being.**
 - **The relentless pursuit of academic excellence, coupled with the fear of disappointing parents or society, can weigh heavily on students, exacerbating feelings of inadequacy and hopelessness.**
- **Limited Opportunities and High Competition**
 - **The scarcity of seats in top-tier educational institutions and the highly competitive nature of the job market further compound the challenges faced by students.**
 - With a vast pool of aspirants vying for a limited number of opportunities, the fear of failure looms large, intensifying the pressure to succeed.
 - **Students from marginalised backgrounds, lacking access to resources and support systems, are particularly vulnerable to the adverse effects of this competitive environment.**
- **Cultural Stigma Surrounding Failure**
 - In Indian society, there exists a pervasive stigma associated with failure, particularly in academic endeavours.
 - Students who struggle academically or fail to meet parental expectations may face ridicule, shame, or ostracization from their families and communities.
 - **This fear of judgment and social exclusion can deter students from seeking help or expressing their struggles, leading to feelings of isolation and despair.**
- **Lack of Emotional Support and Mental Health Resources**
 - Despite the growing awareness of mental health issues, there remains a significant gap in access to emotional support and mental health resources for students in India.
 - **Many educational institutions lack adequate counselling services or trained professionals to address the psychological needs of students.**
 - **The stigma surrounding mental health further complicates matters, as students may hesitate to seek help for fear of being labelled as weak or unstable.**
- **Inequities in Access to Education**
 - **Socio-economic disparities exacerbate the challenges faced by students, with marginalised communities disproportionately affected by the lack of access to quality education and resources.**
 - **Students from lower-income backgrounds may face additional stressors, such as financial insecurity, inadequate infrastructure, and limited educational opportunities, further increasing their vulnerability to mental health issues and suicide.**

Response Measures Undertaken by Institutions in Kota

- **Anti-Suicide Features in Hostels**
 - Coaching institutes and hostels in Kota have installed "anti-suicide features" to prevent self-harm incidents among students.
 - These features may include devices attached to ceiling fans to prevent hanging attempts, as well as iron grills across balconies and passageways to restrict access to potentially dangerous areas.
 - **These physical interventions aim to provide a safer living environment for students and minimise the risk of suicide attempts.**
- **Training Programs for Hostel Staff**

- Recognising the crucial role of hostel staff in supporting student welfare, **institutions in Kota have initiated training programs to equip staff members with the necessary skills** and resources to address the mental health needs of students.
- Training may include workshops on identifying signs of distress, providing psychological support, and intervening in crisis situations effectively.
- **Temporary Suspension of Routine Testing**
 - In a proactive measure to alleviate academic stress, **the local government in Kota has temporarily suspended routine testing in coaching institutes** for over two months.
 - This temporary pause allows students to focus on their well-being without the added pressure of constant assessments and exams, providing a much-needed respite from academic demands.
- **Specialised Training for Staff**
 - In addition to addressing immediate safety concerns, **institutions in Kota are prioritising the holistic well-being of students** through specialised training programs for staff members.
 - This training may encompass various aspects of student welfare, including mess administration, psychological support, behavioural counselling, and overall student supervision.
 - **By equipping staff with the necessary skills and knowledge, institutions aim to create a supportive and nurturing environment** conducive to academic success and personal growth.
- **Community Engagement and Awareness Campaigns**
 - The Kota police have actively engaged with hostel wardens and kitchen staff to promote awareness of student welfare issues and encourage proactive intervention.
 - **Campaigns such as "darwazepe dastak (knock on the door)" emphasise the importance of vigilant monitoring** and timely intervention to prevent potential crises.
 - By creating a sense of community responsibility, **these initiatives aim to create a culture of support and collaboration** in safeguarding student well-being.

Ways Ahead to Ease Pressure and Safeguard the Future of Younger Generation

- **Comprehensive Reform**
 - Addressing the systemic issues within the education system **requires comprehensive reform efforts that encompass academic, social, and institutional dimensions.**
 - Policies and initiatives should prioritize mental health support, promote holistic learning experiences, and mitigate the pressures associated with high-stakes examinations.
- **Community Engagement**
 - **Collaboration between educational institutions, government agencies, community organisations, and families is essential** in creating a supportive ecosystem that nurtures the well-being of students.
 - Community engagement initiatives, awareness campaigns, and advocacy efforts can help destigmatize mental health issues and foster a culture of support and empathy.
- **Emphasis on Student Welfare**
 - **Institutions must prioritise student welfare** and implement proactive measures to address mental health challenges effectively.
 - **This includes investing in specialised training for staff, implementing safety protocols, providing access to counselling services,** and fostering a supportive peer network within educational settings.
- **Promotion of Holistic Development**
 - Beyond academic achievement, **the education system should prioritise the holistic development of students,** including their social, emotional, and physical well-being.
 - Encouraging participation in extracurricular activities, **promoting work-life balance, and fostering a culture of creativity and self-expression are integral** to nurturing well-rounded individuals.
- **Empowerment and Inclusivity**

- **Efforts to reform the education system must prioritise the empowerment and inclusion of marginalised communities**, ensuring equitable access to educational resources and opportunities.
- **Addressing socio-economic disparities, promoting diversity, and fostering a culture of inclusivity are essential** for creating a more equitable and just society.

Conclusion

- **The prevailing challenges in India's education system necessitate urgent reform** to address the mental health and well-being of its students.
- **Efforts must be directed towards creating a supportive and inclusive academic environment** that prioritises holistic development over narrow academic pursuits.
- **Only through concerted efforts at both institutional and societal levels** can India ensure the nurturing of its students and safeguard their future.

3. Lancet projects further fall in India's fertility rate

Why in news?

A recent study by Lancet on global fertility rates has projected fall in India's total fertility rate (TFR).

Total Fertility Rate (TFR)

- **About**
 - **TFR is the average number of children a woman would have during her lifetime if she were to experience the current age-specific fertility rates**, and if she lived from birth until the end of her reproductive life.
 - TFR is a **demographic and socio-economic statistic**.
- **Calculation**
 - The total fertility rate is the **sum of the age-specific fertility rates for all women multiplied by five**.
 - The age-specific fertility rates are those for the 7 five-year age groups from 15–19 to 45–49.

Key highlights of the study

- **Global trends in Total Fertility Rate (TFR)**
 - Researchers estimate that by **2050, 155 of 204 countries (76% of the world) will be below the replacement level of fertility**.
 - The number of countries and territories below replacement level is predicted to further increase to 198 (97%) by 2100.
 - This means that in these locations, populations will shrink unless low fertility can be offset by ethical and effective immigration.
- **Decline in India's fertility rate**
 - In **India, the TFR was 6.18 in 1950** which reduced to 4.60 in 1980 and further declined to 1.91 in 2021.
 - **TFR at 1.9 is below the necessary replacement fertility level of 2.1.**
 - It is projected to dip further to 1.29 in 2050 and 1.04 in 2100.
- **Livebirths in India**
 - In India there were more than 1.6 crore livebirths in 1950 and over 2.2 crore in 2021. The number is projected to fall to 1.3 crore in 2050.

Why fertility went down in India?

- **Role of Family Welfare Programme**

- Post-independence, there was a need to restrict the population. So, the **Family Welfare Programme, including maternal and child health-related cash transfer inducements**, were intended to convince people to have no more than two children.
- Slowly that behaviour change started showing up.
- **Small families became the norm**
 - **Infant mortality declined substantially because of various maternal and child health-related programmes** and successful immunisation.
 - As a result, child survival was guaranteed and hence small families became the norm.
- **Economic factors**
 - With development, the inter-generational flow of wealth has reversed.
 - This means parents now do not receive much benefit from their children the way they used to.
 - Now, elderly parents may find themselves relying less on their children for financial support.
 - Instead, they might depend more on their own savings, retirement plans, or government assistance programs.
 - This has influenced their decision to have an additional child that would involve a substantial cost of bringing them up.
- **Rise in Female literacy and women's participation in the workforce**
 - **Career consciousness, financial returns and economic independence** have meant that women are reconsidering their options of having a second child.

What are long-term consequences?

- The consequences of fertility decline will be that the share of the elderly in the population will increase sharply.
 - By 2050 the share of senior citizens in India will be more than 20%.
- It will also lead to challenges like labour force shortages and potential social imbalances due to gender preferences.

Way forward

- We need to learn from **Scandinavian countries (like Sweden and Denmark)**. They providing affordable **childcare, investing in healthcare** and taking on large-scale male-engagement initiatives to build gender equity.
- For women to be able to manage careers with motherhood, it would be crucial for men to take greater responsibility for household and care work.
- Economic policies that **stimulate growth and job creation, alongside social security and pension reforms**, will also be essential in adapting to and mitigating the impacts of declining fertility rates.

4. World Inequality Lab Report

Why in News?

According to a **paper released by the World Inequality Lab**, the shares of income and wealth of India's top 1% at 22.6% and 40.1% respectively is at their highest historical levels in 2022-23.

About World Inequality Lab:

- The World Inequality Lab (WIL) is a research center at the **Paris School of Economics**.
- The **WIL aims to promote research on global inequality dynamics**.
- It works in close coordination with a large international network of researchers (over one hundred researchers covering nearly seventy countries) contributing to the database.

Key Takeaways from the Working Paper Published by the WIL:

- The working paper by four economics researchers – **Nitin Kumar Bharti, Lucas Chancel, Thomas Piketty, and Anmol Somanchi** – has **created time series data on income and wealth inequality in India**.

- Naming the paper, the “**Billionaire Raj**”, the authors claimed that the country was now more unequal than even the British Raj.
- As per the report, in the year 2022-23, top 1% **income** and **wealth** shares were at their highest ever historical levels in India: **22.6%** and **40.1%**.
- **India’s top 1% income share is among the very highest in the world**, higher than even South Africa, Brazil, and the US, the paper said.
 - The wealth share of the top 1% was lesser in India than in two of these countries: South Africa and Brazil.
- The **paper also highlights the levels of disparity among different income groups**.
- According to the paper, the **top 1% holds an average of Rs 5.4 crore in wealth, 40 times the average Indian**.
- However, the bottom 50% and the middle 40% hold Rs 1.7 lakh (0.1 times national average) and Rs 9.6 lakh (0.7 times national average) respectively.
- At the very top of the distribution, the wealthiest ~ 10,000 individuals out of 92 million Indian adults own an average of Rs 2,260 crore in wealth, 16,763 times the average Indian.

Key Suggestions in the Working Paper:

- The paper has used multiple sources to build its income and wealth inequality estimates.
 - India does not have official income estimates and survey based official statistics on wealth.
- The paper recommends multiple policy measures to address the problem of inequality in India.
- They include **restructuring of the tax code to account for both income and wealth, and broad-based public investments in health, education and nutrition**.
- The report said a “**super tax**” of 2% on the net wealth of the 167 wealthiest families in 2022-23 would yield 0.5% of national income in revenues.
 - It would also create valuable fiscal space to facilitate such investments, besides serving as a tool to fight inequality.

5. How NFHS Data Can Help Craft Policy for Women’s Financial Inclusion

Context

- **Financial inclusion plays a pivotal role** in achieving eight out of the 17 SDGs, emphasising its **crucial role in fostering a sustainable and inclusive future**.
- Despite its significance, **disparities persist, as highlighted in India’s below-average performance in the Global Gender Gap Report 2023**, particularly in the economic domain.
- Therefore, it **becomes crucial to have an assessment of the nuanced dimensions of financial inclusion for women in India**, drawing insights from various sources, **including the World Bank’s Global Findex Database and the National Family Health Survey (NFHS)**.

Global Progress in Financial Inclusion

- Financial inclusion has emerged as a crucial driver of economic growth and development globally, **with India making significant strides in this domain**.
- **The WB’s Global Findex Database highlights a notable increase** in adult ownership of bank accounts worldwide between 2011 and 2020, **with India experiencing a commendable rise of 42 percentage points during this period**.
- This surge underscores the effectiveness of initiatives aimed at expanding access to financial services, **particularly for marginalised populations, including women**.

Impact of Initiatives Undertaken by the Government in Finance Inclusion

- **Reduced Gender Gap in Account Ownership**

- India's efforts to enhance financial inclusion **have yielded promising results, with the gender gap in account ownership witnessing a considerable reduction.**
- The introduction of the Pradhan Mantri Jan Dhan Yojana (PMJDY) in 2014 played a pivotal role in this regard.
- **PMJDY aimed to provide universal access to banking services, offering basic savings accounts, remittance facilities, and overdrafts to underserved communities, including women in rural and urban areas.**
- **As of January 2024, PMJDY has facilitated the opening of over 28 crore accounts for women, significantly contributing to bridging the gender gap in financial access.**
- **Instrumental in Women's Economic Empowerment**
 - Moreover, various government initiatives such as the Deendayal Antyodaya Yojana and the National Rural Livelihood Mission (**DAY-NRLM**) **have been instrumental in fostering women's economic empowerment** and enhancing their participation in the formal financial sector.
 - **These schemes provide avenues for skill development, entrepreneurship training, and access to credit,** thereby enabling women to establish and sustain livelihoods.
 - Additionally, social protection programs like the Pradhan Mantri Awas Yojana and Pradhan Mantri Matru Vandana Yojana offer financial assistance and support to women, particularly during key life stages such as pregnancy and homeownership.

Broader Impact of Financial Inclusion on Women's Empowerment

- The progress in financial inclusion is **not merely confined to access to bank accounts but also encompasses broader economic participation and empowerment.**
- By providing women with avenues for savings, credit, and investment, financial inclusion enables them to mitigate risks, accumulate assets, and seize opportunities for socio-economic advancement.
- **Furthermore, increased financial access enhances women's resilience to economic shocks and vulnerabilities,** fostering greater household welfare and economic stability.

Insights from NFHS Data about the Progress in Financial Inclusion

- **Financial Autonomy and Decision-making**
 - NFHS data provides **valuable insights into the nuanced dimensions of women's financial inclusion in India.**
 - Over the past two decades, there has been a notable improvement in various indicators related to women's economic empowerment and access to financial services.
 - **One significant aspect highlighted by NFHS surveys is the increasing financial autonomy among women.**
 - Women are gaining greater control over financial resources, with a growing number possessing self-operated bank accounts and exercising sovereignty over financial decisions within their households.
 - **This trend signifies a shift towards greater economic agency and independence among women,** contributing to their overall empowerment and well-being.
- **Awareness and Utilization of Micro-Credit Programs**
 - **Micro-credit schemes play a crucial role in providing financial assistance to women entrepreneurs** and small business owners, particularly in rural areas.
 - NFHS surveys indicate a growing awareness of these programs among women, with an increasing number availing themselves of micro-credit facilities to support their economic activities.
 - **This underscores the importance of targeted interventions and support mechanisms in enabling women to access formal sources of credit and finance,** thereby fostering entrepreneurship and income generation at the grassroots level.
- **Access and Utilisation of Formal Banking Services**
 - By analysing factors such as education, occupation, and household characteristics, NFHS surveys identify key determinants of women's financial inclusion.
 - **Education emerges as a significant driver, with educated women exhibiting higher levels of awareness and utilisation of financial services.**

- Similarly, occupation and access to electronic media also play crucial roles in shaping women's access to formal banking channels and digital financial tools.
- **These findings underscore the importance of targeted interventions and policy measures to address disparities and barriers hindering women's financial inclusion**, particularly among marginalized and vulnerable groups.

Challenges and Future Directions

- **Addressing Financial Literacy Gaps**
 - Despite the expansion of banking services, **many individuals, particularly in rural and marginalised communities, lack adequate knowledge and understanding of financial products and services.**
 - Enhancing financial literacy through targeted education and awareness campaigns is essential to empower individuals to make informed financial decisions and fully utilize available resources.
- **Bridging the Digital Divide**
 - While digital financial services hold immense potential to enhance access and convenience, disparities in internet connectivity, **smartphone ownership, and digital literacy limit their effectiveness.**
 - **Expanding digital infrastructure and promoting digital literacy initiatives are imperative** to ensure equitable access to digital financial services for all segments of society.
- **Promoting Inclusivity of Marginalised Communities**
 - Moreover, **ensuring the inclusivity of marginalized communities, including women, minorities, and persons with disabilities, remains a pressing challenge.**
 - Despite concerted efforts to promote financial inclusion, these groups continue to face systemic barriers, including social, cultural, and economic factors.
 - **Tailored interventions and affirmative action programs are necessary** to address these disparities and create an enabling environment for their meaningful participation in the financial ecosystem.
- **Advancing through Multi-stakeholder Collaboration**
 - To overcome these challenges and advance financial inclusion, **a multi-stakeholder approach is indispensable.**
 - **Collaboration between government agencies, financial institutions, civil society organisations, and grassroots initiatives is essential** to coordinate efforts, leverage resources, and implement holistic solutions.

Conclusion

- **Advancing financial inclusion for women in India is pivotal for creating inclusive growth and sustainable development.**
- **Initiatives such as PMJDY and DAY-NRLM have laid a strong foundation, yet concerted efforts are needed to address existing disparities** and harness the full potential of women's economic participation.
- **By prioritising education, digital literacy, and targeted awareness programs, India can unlock new avenues for women's economic empowerment, driving forward the agenda of inclusive growth and prosperity.**

6. Ocean Warming

Why in news?

The average global sea surface temperature (SST) for February 2024 stood at 21.06 degree Celsius. This is the highest recorded temperature in a dataset that goes back to 1979. The previous record of 20.98 degree Celsius was set in August 2023.

Why are the oceans getting warmer?

- **Greenhouse Gas(GHG) Emissions**

- Since the Industrial Revolution, **human activities such as burning fossil fuels have released high levels of GHGs in the atmosphere.**
- **Carbon dioxide, methane, ozone, and nitrous oxide are some of the notable GHGs**, which essentially trap heat in the atmosphere and contribute to global warming.
- As a result, the average global temperature has risen at least 1.2 degree Celsius above pre-industrial times.
- **Heat Absorption**
 - **Almost 90 per cent of the extra heat trapped by GHGs** has been absorbed by the oceans, making them steadily warmer over the decades.
- **Deforestation**
 - **Deforestation reduces the number of trees available to absorb CO2 from the atmosphere.** This leads to higher concentrations of GHGs, contributing to global warming and consequently, ocean warming.
- **Melting Ice**
 - As global temperatures rise, polar ice caps and glaciers melt, adding freshwater to the oceans.
 - **This influx of freshwater can disrupt ocean currents and contribute to changes in temperature and salinity, further affecting ocean warming.**
- **Impact of El Niño**
 - **El Niño is a weather pattern that refers to an abnormal warming of surface waters in the equatorial Pacific Ocean.**
 - It has contributed to both ocean warming and rising global surface temperatures.
- **Less dust blowing off the Sahara Desert** recently due to weaker-than-average winds.
 - Typically, the dust forms a giant umbrella that shades the Atlantic water and reduces ocean temperatures.
 - But now, the umbrella has partially folded and more of the Sun is beating down on the ocean.
- **Natural Variability**
 - While human activities are the primary driver of recent ocean warming, natural factors such as **volcanic eruptions, changes in solar radiation, and ocean currents** also play a role in short-term variations in ocean temperature.

Why are rising sea surface temperatures a cause of worry?

- **Irreversible consequences for marine ecosystems**
 - **Warmer oceans lead to increased ocean stratification**, where water separates into layers based on density.
 - Warmer, lighter, less salty, and nutrient-poor water sits atop colder, saltier, and nutrient-rich water.
 - Normally, ocean processes like currents, wind, and tides mix these layers, but stratification disrupts this.
- **Threat to marine life**
 - The rise in temperatures, however, has made it harder for water layers to mix with each other.
 - Due to this, oxygen absorbed isn't able to mix properly with cooler ocean waters below, threatening the survival of marine life.
- **Impact on Phytoplankton**
 - Nutrients are also not able to travel up to the surface of the oceans from below. This could threaten the population of phytoplankton.
 - **Phytoplanktons are single-celled plants that thrive on the ocean surface and are the base of several marine food webs.**
 - Phytoplanktons are eaten by zooplankton, which are consumed by other marine animals such as crabs, fish, and sea stars.
 - Therefore, if the phytoplankton population plummets, there could be a collapse of marine ecosystems.
- **Coral Bleaching**
 - **Corals are highly sensitive to changes in SSTs.** When waters become too warm, corals expel the algae living in their tissues, causing them to turn white or bleach.
 - Bleached corals are stressed and more susceptible to disease and death.

- **Ocean Acidification**

- **Warmer SSTs can exacerbate ocean acidification**, a process driven by the absorption of CO₂ from the atmosphere.
- Increased CO₂ levels lower the pH of seawater, making it more acidic.
- **This acidification can harm marine organisms with calcium carbonate shells or skeletons**, such as shellfish, corals, and some planktonic species, impacting entire marine food webs.

- **Extreme Weather Events**

- Warm ocean waters provide the energy needed to fuel tropical storms and hurricanes.
- Rising SSTs can lead to more intense storms, with higher wind speeds & heavier rainfall posing risks to coastal communities, infrastructure, and economies.

- **Sea Level Rise**

- Warm water expands, contributing to thermal expansion of the oceans, which is a **significant driver of global sea level rise**.
- Threatening coastal communities with more frequent and severe flooding, erosion, and saltwater intrusion into freshwater sources.

- **Impacts on Climate Patterns**

- **Changes in SSTs can influence atmospheric circulation patterns**, such as the formation of weather systems like El Niño and La Niña.
- These climate phenomena can have widespread effects on weather patterns, precipitation, and temperature extremes around the globe, affecting agriculture, water resources, and ecosystems.

Conclusion

Addressing the root causes of rising SSTs, primarily anthropogenic greenhouse gas emissions, is crucial to mitigating these impacts and protecting both marine and human well-being.

7. India ranks 134th in global human development index

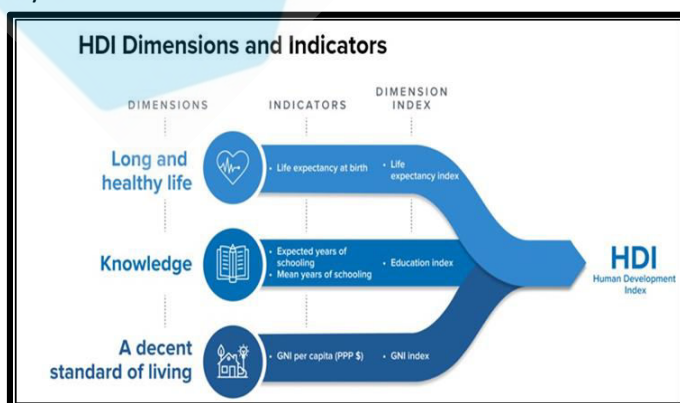
Why in news?

India's ranking on the United Nations Human Development Index (HDI) improved by one position in 2022 to 134 out of 193 countries ranked compared to 135 out of 191 countries in 2021. Switzerland has been ranked number one.

The Human Development Index (HDI)

- **About**

- It is a statistical composite (first published in 1990 by the UNDP) index, which measures average achievement of a country in 3 basic dimensions –



- **Background**

- It was **developed by Pakistani economist Mahbub ul Haq** and is now used to assess a country's development as part of the United Nations Development Programme's Human Development Report.

- **Along with HDI, HDR also presents:**
 - Multidimensional Poverty Index (MPI),
 - Inequality-adjusted Human Development Index (IHDI),
 - Gender Inequality Index (GII) since 2010 and
 - **Gender Development Index (GDI)** since 2014.
- The HDI also embodies **Amartya Sen's "capabilities" approach** to understand human well-being, which emphasizes the importance of ends (like a decent standard of living) over means (like income per capita).

Key Highlights of the HDR 2023/24 – India specific

- **Theme of the report**
 - Recently released 2023/24 Human Development Report (HDR) was titled as **"Breaking the Gridlock: Reimagining Cooperation in a Polarized World."**
- **India's ranking**
 - India ranked 135 in 2021. It had moved up to 134 in 2022.
- **India in the medium human development category**
 - Between 1990 and 2022, the country saw its HDI value increase by 48.4 percent, from 0.434 in 1990 to **644 in 2022**.
- **India's performance on various indicators**
 - India's life expectancy at birth has slightly improved from 67.2 years in 2021 to **67.7 years in 2022**.
 - There is an overall increase (5.88%) in expected years of schooling (EYS) from 11.9 years to 12.6 years, leading to an improvement of 18 places.
 - Gross National Income (GNI) per capita also improved from \$6,542 to \$6,951.
- **Performance of India's neighbourhood**
 - **Sri Lanka has been ranked much ahead at 78, while China is ranked 75, both categorised under the High Human Development category.**
 - Bhutan stands at 125 and Bangladesh at 129th position.
 - **Nepal (146) and Pakistan (164) have been ranked lower than India.**
- **India's progress in reducing gender inequality**
 - India has also shown progress in reducing gender inequality and **ranks 108 out of 166 countries in the Gender Inequality Index (GII) 2022.**
 - The **GII** measures gender inequalities in three key dimensions – **reproductive health, empowerment, and labour market.**
 - The **country's GII value of 0.437** is better than the global average of 0.462 and the South Asian average of 0.478.
 - India's performance in reproductive health is better than other countries in the medium human development group or South Asia.
 - India's adolescent birth rate in 2022 was 16.3 (births per 1,000 women ages 15-19), an improvement from 17.1 in 2021.
 - However, India also has one of the **largest gender gaps in the labour force participation rate**—a 47.8 percentage points difference between women (28.3%) and men (76.1%).

Observations made by the HDR 2023/24

- The report shows that the **two-decade trend of steadily reducing inequalities between wealthy and poor nations is now in reverse.**
- The failure of collective action to advance action on climate change, digitalisation or poverty and inequality not only hinders human development but also worsens polarisation and further erodes trust in people and institutions worldwide.
- Nine in 10 people worldwide endorse democracy, but over half of the respondents expressed support for leaders who may undermine it, for instance, by bypassing fundamental rules of the democratic process.

- **Political polarisation in countries is also responsible for protectionist or inward-turning policy approaches.**

Four areas for immediate action proposed by the report

- To break through the current deadlock & reignite a commitment to a shared future:
 - **planetary public goods** for climate stability as we confront the unprecedented challenges of the Anthropocene;
 - **digital global public goods** for greater equity in harnessing new technologies for equitable human development;
 - **new and expanded financial mechanisms**, including a novel track in international cooperation that complements humanitarian assistance and traditional development aid to low-income countries; and
 - **dialling down political polarization** through new governance approaches focused on enhancing people's voices in deliberation and tackling misinformation.

8. Gender Equality as the Plank of Sustainable Development

Context

- **Conversations surrounding gender equality and women's empowerment have gained considerable momentum.**
- However, **there is a connection between gender equality and sustainable energy development** which is often overlooked.
- Therefore, **the issue of intricate relationship between these two domains**, emphasising their fundamental role in achieving Sustainable Development Goals (SDGs) **needs to be explored and discussed.**

Understanding the Integral Role of Gender Equality in Sustainable Energy

- **Foundational Connection to SDGs**
 - Gender equality is **intricately woven into the fabric of the SDGs**, especially SDG5 (gender equality), SDG7 (clean, affordable energy), and SDG12 (climate action).
 - **Achieving gender equality is recognised as a cross-cutting enabler**, influencing the success of various SDGs.
- **Influence on Clean Energy Access**
 - Studies consistently highlight that **gender equality and women's empowerment are fundamental to achieving sustainable energy for all.**
 - Recognising women as active participants in the energy sector is essential for designing effective policies and strategies to ensure inclusive and equitable clean energy access.
- **Strategic Linkages to Climate Action**
 - Gender equality is an integral aspect of climate action, **as evidenced by its inclusion in SDG12.**
 - Empowering women in the energy sector **contributes to more sustainable and climate-resilient practices**, aligning with the broader goal of mitigating environmental degradation.
- **Social Justice and Economic Growth**
 - Beyond its instrumental role in achieving specific SDGs, **gender equality in sustainable energy is a matter of social justice.**
 - Recognizing and addressing gender disparities in energy access is not only a moral imperative but also a catalyst for overall economic growth and prosperity.

Gender Disparities in the Energy Sector: Reasons and Implications

- **Underrepresentation in the Workforce**
 - The energy sector continues to be one of the least gender-diverse industries, with **women constituting only 32% of full-time employees in the renewable energy sector and a mere 22% in the broader energy sector.**
 - The disparity becomes even more pronounced when compared to the global labour force, where women represent 48% of workers.

- **Educational Barriers and Limited Technical Training**
 - Disparities in educational access contribute significantly to the gender gap in the energy sector.
 - **Limited opportunities for women to acquire technical skills** and training compound the issue, restricting their ability to pursue careers in energy-related fields.
- **Inequitable Policies**
 - **Workplace policies within the energy sector often perpetuate** gender disparities.
 - Discriminatory practices, biased hiring processes, and insufficient family-friendly policies hinder women's progress within the sector.
- **Regional Disparities**
 - Disparities in gender representation vary across regions, **reflecting the intersectionality of gender with other factors such as culture, socio-economic status**, and geographic location.
 - For instance, in India, only 10% of women hold technical posts in the energy sector, highlighting the need for context-specific interventions.
- **Stereotypes and Perceptions**
 - **Deep-seated stereotypes regarding gender roles and capabilities persist** within the energy industry.
 - Preconceived notions often limit women's opportunities to take on leadership roles or pursue careers in technical and engineering fields.
- **Lack of Mentorship and Networking Opportunities**
 - Women in the energy sector often **face challenges in accessing mentorship and networking opportunities**.
 - A lack of role models and supportive networks contributes to the perpetuation of gender imbalances.
- **Impact on Innovation and Productivity**
 - The underrepresentation of women in the energy sector **stifles innovation and hampers productivity**.
 - Diverse teams, including women, bring different perspectives and ideas, fostering creativity and problem-solving in an industry that requires constant innovation.
- **Economic Implications**
 - The gender gap in the energy sector **has broader economic implications**.
 - By limiting the potential of half the workforce, **the sector misses out on the valuable contributions that women could bring to drive economic growth** and sustainability.

Economic Benefits of Empowering Women in the Energy Sector

- **Boost to Global GDP**
 - Closing the gender gap in employment and entrepreneurship within the energy sector has the **potential to boost global Gross Domestic Product (GDP) by trillions of dollars**.
 - By fully utilising the skills, expertise, and innovation of women, the energy industry can significantly contribute to economic growth on a global scale.
- **Diversification and Innovation**
 - Women bring diverse perspectives and experiences to the energy sector, fostering innovation and creativity.
 - **Diverse teams, including women, are more likely to generate innovative solutions**, leading to the development of new technologies and practices that enhance the sector's overall efficiency.
- **Increased Productivity**
 - **Gender diversity in the workplace has been linked to increased productivity**.
 - Women, when provided with equal opportunities, contribute to a more dynamic and productive workforce, positively impacting the overall performance of energy-related projects and initiatives.
- **Job Creation and Economic Inclusion**
 - Empowering women in the energy sector **leads to the creation of more jobs, thereby contributing to economic inclusion**.
 - Increased job opportunities for women **not only enhance their economic well-being but also contribute to poverty reduction and economic stability** in the broader society.

Way Forward

- **Bridge the Gender Gap**

- Tackling gender disparity **requires a change in perception towards women's role in the energy sector** and concerted efforts to mainstream gender in energy policies at the sub-national, national, and international levels.
- **Governments, non-state actors, international institutions and philanthropic organisations have a critical role to play** in providing an enabling environment, innovative solutions, and transformative platforms.
- It **will not only increase access to clean energy but also deliver groundbreaking solutions to promote women's meaningful participation** in the sustainable energy transition.

- **Entrepreneurial Ventures and Collective Action**

- Initiatives such as the **Energy Transitions Innovation Challenge (ENTICE)** provide a forum for individuals, especially women, to embark on entrepreneurial ventures and drive collective action for sustainable energy practices.
- There is also an opportunity for **Distributed Renewable Energy (DRE)**, which are already being deployed by various State governments in India in collaboration with philanthropic organisations.
- It **will quickly provide affordable energy access and reduce the everyday drudgery of women's work**, thereby increasing their productivity.
- **Solar Mamas is one inspirational initiative started in India by Barefoot College to train illiterate women to become solar engineers, bringing clean power and light to their communities.**

Conclusion

- It is **important to recognise that the dialogue on gender and energy has clearly shifted from women being identified as part of vulnerable groups to acknowledging them as key agents of change** and decision makers across the energy sector.
- **Gender-responsive and women-led initiatives have been successful** in the clean energy space.
- That is why, **this is the right time to harness the power of women and energy to create a more inclusive, prosperous, and sustainable world** for present and future generations.

9. Can A Justice System Without Women Bring Justice to Women?

Context

- **Diversity is a crucial element** in the effectiveness of institutions worldwide, with **gender inclusion being a key indicator of commitment to this value.**
- On International Women's Day, it is crucial to **look into the state of gender diversity within India's justice delivery system, as highlighted in the latest India Justice Report (IJR).**
- The **data highlights a glaring gender gap across various subsystems**, raising questions about the commitment of justice institutions to fostering inclusivity.

Disparities Highlighted by India Justice Report (IJR) Within the Justice Delivery System

- **Subsystem Disparities**

- The IJR highlights that the **gender gap extends its reach into each subsystem of the justice delivery system**, including the police, judiciary, prisons, legal aid, and human rights commissions.
- This **comprehensive report highlighted the systemic nature of the issue**, suggesting that the problem is not isolated but pervasive across all facets of the justice system.

- **Quotas and Limited Progress**

- While quotas have been instrumental in facilitating the inclusion of women, their impact seems to be concentrated in lower echelons of the justice delivery system.
- **The report's data indicates that despite these affirmative action measures, women are not proportionately represented** in higher-ranking positions.

- **Numerical Underrepresentation**
 - A quick estimation in the IJR exposes the stark reality that there are approximately only three lakh women in the justice delivery system.
 - The numbers not only reflect an inadequate representation but also hint at deeper structural issues inhibiting the full participation of women in the justice system.
- **Judiciary's Gender Disparity**
 - Within the judiciary, the data reveals a concerning trend where, **despite the presence of women in the lower ranks, their numbers drastically diminish** as one ascends the hierarchy.
 - For instance, while 35% of subordinate judges are women, this percentage plummets to a mere 13% in the high courts.
 - **The glaring lack of women in the Supreme Court, with only three women judges, raises questions** about the accessibility and inclusivity of the highest echelons of the justice system.
- **Leadership Void**
 - The most glaring is the **absence of a woman Chief Justice of India, a position that has remained elusive to women** despite decades of existence.
 - Even in high courts, **where the glass ceiling should have been shattered over the years, only 16 women have held the position of chief justice** in over seven decades.
 - **This leadership void underscores the entrenched barriers** preventing women from reaching the pinnacle of the judicial hierarchy.
- **NHRC's Gender Imbalance and Limited Women Representation**
 - **The NHRC, envisioned as an exemplar of fairness and justice, has failed in embodying these principles concerning gender representation.**
 - The IJR reveals that, throughout its existence, **the NHRC has never had a woman commissioner.**
 - This absence of women at the highest levels of decision-making within a commission tasked with safeguarding human rights is a stark illustration of institutional apathy towards gender diversity.
 - **The IJR's findings extend beyond the NHRC, encompassing state commissions as well.**
 - Across the country, these institutions exhibit a striking lack of concern for gender diversity. As of 2022, only six commissions had women serving as members or secretaries.
 - **The absence of women chairpersons, with only Kerala, Meghalaya, and Punjab having a lone woman member each,** emphasises the entrenched nature of gender imbalance in these pivotal bodies.

Possible Reasons Behind the Disparity

- **Lack of Initiative: Institutional Apathy**
 - The dearth of women in key roles within these commissions **reflects not only a numerical deficiency but also a lack of initiative** to actively address and rectify this imbalance.
 - The IJR findings suggest a **notable apathy within these institutions**, where the imperative to foster gender diversity is either overlooked or deemed a secondary concern.
- **Complacency**
 - The state commissions, mirroring the NHRC's deficiencies, **fail to serve as beacons of gender inclusivity.**
 - The IJR's data presents a **disheartening picture, with only a handful of commissions exhibiting a willingness to appoint women** to decision-making positions.
 - The absence of proactive measures to rectify this imbalance **perpetuates an institutional culture indifferent to the benefits of diverse perspectives** and experiences.
- **Deflection of Responsibility**
 - Instead of addressing the root causes of gender disparity, decision-makers within these institutions often resort to deflecting responsibility.

- The excuse of "difficulties" in "accommodating" more women is a common deflection tactic, diverting attention from the pressing need to challenge existing institutional structures and cultures that inhibit the entry and retention of women.

Potential Benefits of Creating Diversity Within the Justice Delivery System

- **Global Research Findings**
 - Across the world, research consistently underscores **the positive impact of diverse and inclusive workplaces.**
 - The IJR aligns with this global perspective, **emphasising that the inclusion of women, along with other diversities, has the potential to reshape institutional culture** within the justice system.
 - **It challenges the status quo by introducing fresh perspectives,** experiences, and approaches that contribute to a more comprehensive understanding of complex issues.
- **Internal Dynamic Transformation**
 - The inclusion of women within traditionally male-dominated institutions **alters internal dynamics by challenging entrenched norms and fostering a culture of openness.**
 - This transformation extends beyond mere numerical representation; it involves the integration of diverse viewpoints, communication styles, and problem-solving approaches.
 - **Women, as integral contributors, can catalyse a shift towards more collaborative,** empathetic, and innovative decision-making processes.
- **Enhanced Public Perception**
 - Inclusive institutions not only benefit internally but also enhance public trust and perception.
 - The justice delivery system, when reflective of the diverse population it serves, becomes more responsive, credible, and representative of societal values.
 - **This alignment between the institution and the public it serves strengthens the legitimacy and effectiveness of the justice system,** fostering a sense of trust and inclusivity.

Way Forward

- **Institutional Preparedness**
 - The call for institutional change begins with a demand for preparedness. Justice administrators are urged to proactively address the systemic challenges hindering the inclusion of women.
 - **This involves a comprehensive assessment of existing structures, policies, and practices to identify and dismantle barriers** that hinder the full and equitable participation of women at all levels of the justice system.
- **Leadership by Example**
 - The absence of a woman Chief Justice of India and the scarcity of women in leadership roles within the judiciary underscore the need for a paradigm shift.
 - **Institutions must actively promote and support the rise of women to leadership positions, challenging preconceived notions** and dismantling the glass ceiling that has historically restricted their upward mobility.
- **Re-examination of Recruitment and Retention Practices**
 - **There is a need for a critical re-examination of recruitment and retention practices** within the justice delivery system.
 - **This entails a thorough review of hiring practices, promotion criteria, and measures to ensure the equitable treatment of men and women** throughout their careers.

Conclusion

- Achieving justice requires dismantling barriers, ensuring equal opportunities, and acknowledging that gender imbalance perpetuates sub-par institutional cultures **but the gender gap within India's justice delivery system reflects embedded institutional bias.**

- To live up to the core values of equality and equity, **justice institutions must move beyond superficial measures and address the systemic challenges** hindering the inclusion of women.
- **The onus lies on decision-makers to lead by example, re-evaluate existing practices, and implement measures** that create gender balance and inclusivity within the justice system.

10. Obesity on the Rise, High Levels of Undernutrition Persist in India

Why in News?

- According to a new study published by the Lancet, India has become one of the countries with a high “**double burden,**” of **Obesity** and **Undernutrition**.

Meaning of Obesity & Undernutrition in Health-Related Studies:

- **Obesity:**
 - According to the World Health Organisation (WHO), **obesity is an abnormal or excessive accumulation of fat that poses health risks.**
 - **Adults — anyone over the age of 20 years — are considered to be obese, if they have a body mass index (BMI) of 30 kg/m² or more.**
 - BMI is a person’s weight in kilograms divided by the square of height in meters, according to the Centers for Disease Control and Prevention.
 - **School-aged children and adolescents — anyone between the ages of 5 and 19 years — are considered obese, if their BMI is two standard deviations above the mean.**
- **Underweight:**
 - Underweight is one of the four broad sub-forms of undernutrition.
 - **An adult is considered underweight if their BMI is less than 18 kg/m².**
 - School-aged children and adolescents are considered underweight if their BMI is two standard deviations below the mean.

Key Highlights of the Study Published by the Lancet:

- **Obesity in India:**
 - **Obesity in women has spiked in the past three decades** — it increased from 1.2% in 1990 to 9.8% in 2022, according to the study.
 - There were **44 million women living with obesity in 2022.**
 - Meanwhile, obesity in men increased by 4.9 percentage points during the same period, with 26 million men living with obesity in 2022.
 - Notably, there has also been a **significant increase in childhood obesity.**
 - There has been a spike of 3 percentage points in girls and 3.7 percentage points in boys over the 32 years that the study examined.
 - In 2022, 3.1% of girls and 3.9% of boys were obese.
- **Underweight in India:**
 - Despite a significant decline, the prevalence of underweight and thinness continues to be high across genders and age groups.
 - The study found that **13.7% of women and 12.5% of men were underweight.**
 - **Thinness — a measure of being underweight in children — in Indian girls was found to be the highest in the world, with a prevalence of 20.3%.**
 - And, it was the second highest in Indian boys, with a prevalence of 21.7%.

Why Women are more Obese than Men?

- **Women are more prone to putting on weight because most of them do not have access to or time for physical activities such as walks or gyms.**
- They are also likely to put the nutrition of the family above theirs.
- If central obesity were to be considered, obesity in women would be as high as 40% to 50% in many parts of the country.
- A better predictor of future risk of diseases like diabetes and hypertension, **central obesity is an excess accumulation of fat in the abdominal area.**

Impact of Socio-economic Conditions on Obesity and Undernutrition:

- **Obesity is no longer the disease of the rich in India. Eating junk food is cheaper and easier.**
 - For example, the cost of samosas and pakoras available at roadside shacks is less than fruit and vegetables. While it is not nutritious, it is tastier.
- While it is affecting more people, there continues to be a rural-urban divide when it comes to obesity.
- An analysis of the National Family Health Survey-5 (NFHS-5) data from last year shows that the **prevalence of obesity was 31.7% in urban women and 19% in rural women.**
 - It was 28.6% among urban men and 18.8% among rural men.
- Undernutrition persists in extremely remote and rural parts of poorer states where access to any kind of food is low.
- **Undernutrition is prevalent in the extremely poor populations in states like Bihar, Jharkhand, or Odisha, where people might be eating just one meal a day.**

Impact of Obesity & Undernutrition on Health:

- The health consequences of obesity are obvious. An increase in obesity, especially in children, is likely to lead to an increase in diseases such as diabetes, hypertension, heart attacks, and strokes.
- The effect of undernutrition, however, is not so obvious. Undernutrition is likely to increase the burden of non-communicable diseases.
 - **Non-communicable diseases are diseases that are not spread through infection or through other people, but are typically caused by unhealthy behaviors.**

Way Ahead:

- Obesity and underweight should not be considered in isolation, according to the study.
- As per the study, the underweight-obesity transition can occur rapidly, leaving their combined burden unchanged or higher.
- It proposes that the **focus has to be on programmes that enhance healthy nutrition.**
 - These may include **programmes such as targeted cash transfers, food assistance as subsidies or vouchers for healthy foods, free healthy school meals, and primary care-based nutritional interventions.**
- Other than ensuring food security, the study also mentioned that there is an urgent need for supporting weight loss in those with obesity.
- Prevention and management are especially important because the age of onset of obesity has decreased, which increases the duration of exposure.

11. Understanding the World of the Informal Waste Picker

Context

- **International Waste Pickers Day**, observed on March 1, **serves as a distressing reminder of the challenges faced by informal waste pickers worldwide.**
- Despite their critical contributions, **these workers face systemic marginalisation, health hazards, and exclusion from legal protection frameworks.**

- Therefore, often-overlooked world of informal waste pickers in India, **their indispensable yet invisible roles in waste management systems need to be understood.**

Challenges Faced by Informal Waste Pickers

- **Systemic Marginalisation**
 - Informal waste pickers, **comprising primarily women, children, and the elderly, represent one of the most hyper-marginalised cohorts** in the waste management ecosystem.
 - The Periodic Labour Force Survey (PLFS) 2017-18 highlights that **within India's urban workforce, nearly 1.5 million waste pickers operate**, half of whom are women.
 - This vulnerable demographic undertakes hazardous work, **collecting an average of 60 kg to 90 kg of waste daily without proper safety equipment.**
 - Moreover, **their subordinate position in the caste hierarchy exacerbates their already precarious situation**, leading to health issues (dermatological and respiratory problems), along with regular injuries.
- **Economic Uncertainty**
 - **Their irregular work, low income, and susceptibility to exploitation create a cycle of poverty that is difficult to escape.**
 - The **Alliance of Indian Waste Pickers (AIW) report in 2023** underscores the impact of private sector participation in municipal solid waste management.
 - By **employing expensive machinery and offering competitive rates to waste generators, private actors marginalise informal pickers**, compelling them to resort to hazardous waste picking activities, such as scavenging from dump sites.
 - **This not only heightens their health risks but also compromises their income and social status.**
- **Lack of Recognition and Representation**
 - **The invisibility of informal waste pickers in policy and legal frameworks** compounds their struggles.
 - Despite being an integral part of waste management systems, **they are often excluded from decision-making processes.**
 - **The non-recognition of their contribution** and the absence of representation in discussions around waste management policies **create a void in advocacy for their rights.**
 - **The result is a group of workers left without legal protections, social security, and a voice in shaping the very systems they contribute to.**
- **Exclusion of Informal Waste Pickers**
 - **The entry of private players in municipal solid waste management, while bringing technological advancements, further alienates informal waste pickers.**
 - **Dump sites are often cordoned off, limiting their access, and pushing them into further vulnerability.**
 - The privatisation of waste management, as highlighted by the AIW, not only sidelines informal pickers but also poses threats to their health, income, and overall well-being.
 - **This exclusionary approach further deepens the divide between formal and informal waste management sectors.**

Extended Producer Responsibility (EPR) and its Potential

- **EPR offers a promising framework** by transferring the responsibility of waste management from municipal authorities to those who produce commercial waste.
- It **signifies a departure from the traditional "end-of-the-pipe" waste management approach**, encouraging producers to adopt eco-friendly practices, reduce waste generation, and take an active role in recycling.
- In theory, **EPR holds the potential to integrate social inclusivity by acknowledging the role of informal waste pickers** and other grassroots actors.

Concerns and Complexities Surrounding EPR Pertaining to Informal Waste Pickers

- **Implementation Issues: Diverting Waste from Informal Sector**
 - Despite its noble intentions, **the practical implementation of EPR has raised concerns about its impact on the informal waste sector.**
 - **Women in Informal Employment: Globalizing and Organizing (WIEGO)** highlights that **EPR guidelines often redirect waste away from the informal sector.**
 - **This redirection threatens the livelihoods of informal waste pickers,** potentially leading to large-scale displacement.
 - **The promise of social inclusion through EPR encounters a stark reality** wherein the informal sector, a crucial component of waste management, risks being sidelined.
- **Neglecting Informal Waste Pickers**
 - **The AIW** has observed a significant oversight in the formulation and implementation of EPR guidelines in India.
 - While stakeholders identified in the guidelines include the CPCB, producers, brand owners, industry associates, civil society organisations, and citizens, **the specific inclusion of informal waste pickers or their representative organisations is notably absent.**
 - This exclusion contradicts the principles of social justice and sustainability that EPR is designed to uphold.
- **Conflict Between Solid Waste Management Rules and EPR Guidelines**
 - The conflict between the Solid Waste Management Rules 2016 and the EPR Guidelines 2022 **adds another layer to the challenges faced by informal waste pickers.**
 - While the former mandates the inclusion of waste pickers in municipal solid waste management systems, **the latter fails to prioritise their participation.**
 - **This disconnect underscores the need for a coherent and integrated approach to waste management policies,** where the rights and contributions of informal waste pickers are recognized and protected.

Way Forward

- **Recalibration of EPR Policies**
 - For EPR to fulfil its promise of sustainable waste management and social inclusion, **a recalibration of its guidelines is imperative.**
 - **Recognising the traditional knowledge possessed by waste pickers and involving them in decision-making processes** can enhance the effectiveness of EPR systems.
 - Additionally, **stakeholders, including producers and policymakers, must actively engage with informal waste pickers** and their representative organizations to ensure a fair and just transition.
- **Plastic Treaty and a Just Transition**
 - **Globally, waste pickers contribute significantly to sustainable recycling,** collecting, and recovering up to 60% of all plastic.
 - Despite their vital role, **their work is undervalued, and they struggle to earn a decent living.**
 - **The imminent global Plastic Treaty,** aiming to address plastic pollution, **must ensure a just transition for these workers,** recognising their contributions and safeguarding their livelihoods.

Conclusion

- As India faces a rising tide of plastic waste generation, **the importance of integrating informal waste pickers into waste management frameworks becomes increasingly evident.**
- As the traditional knowledge possessed by these workers could enhance the effectiveness of EPR systems, **it is crucial to rethink EPR norms and actively involve millions of informal waste pickers in a legal framework.**
- **International cooperation and local initiatives must converge to recognise, protect, and empower these invisible workers,** creating a more inclusive and resilient waste management ecosystem.

General Studies-II

1. Virtual Asset Service Providers

Why in News?

The **Financial Action Task Force (FATF)** has found that many countries are yet to fully implement its requirements aimed at preventing misuse of virtual assets and virtual asset service providers (VASPs).

The FATF plenary in February 2023 agreed on a road map to strengthen the implementation of its standards on virtual assets and VASPs. Recently, it carried out a survey on the current levels of implementation.

About Virtual Asset Service Providers (VASPs):

- Virtual assets (crypto assets) refer to “any digital representation of value that can be digitally traded, transferred or used for payment”.
- **A Virtual Asset Service Provider (VASP) is defined by the Financial Action Task Force (FATF) as a business that conducts one or more of the following actions on behalf of its clients:**
 - Exchange between virtual assets and fiat currencies
 - Exchange between one or more forms of virtual assets
 - Transfer of virtual assets
 - Safekeeping and/or administration of virtual assets or instruments enabling control over virtual assets
 - Participating in and provision of financial services related to an issuer's offer and/or sale of a virtual asset
- This definition encompasses a range of crypto businesses including **exchanges, ATM operators, wallet custodians, and hedge funds.**

About Financial Action Task Force (FATF):

- The **Financial Action Task Force (FATF)** is an intergovernmental organisation founded in 1989.
- It is an **initiative of the G7 countries to develop policies to combat money laundering.**
 - In 2001, its mandate was expanded to include **terrorism financing.**
 - It has also started dealing with **virtual currencies.**
- It sets international standards that aim to prevent these illegal activities and the harm they cause to society.
- It is a **“policy-making body” which works to generate the political will to bring about national legislative and regulatory reforms in money laundering.**
- It monitors progress in implementing its recommendations through "peer reviews" ("mutual evaluations") of member countries.
- The **FATF Secretariat is located in Paris.**

Members of FATF:

- The **FATF currently comprises 38 member jurisdictions and two regional organisations**, representing most major financial centres in all parts of the globe.
- **India became an Observer at FATF in 2006.** In 2010, India was taken in as the 34th country member of FATF.

What are FATF 'Grey List' and 'Black List'?

- **FATF has 2 types of lists:**
 - **Black List:**
 - **Countries known as Non-Cooperative Countries or Territories (NCCTs) are put in the blacklist.**
 - These countries support terror funding and money laundering activities.
 - The FATF revises the blacklist regularly, adding or deleting entries.

- **Grey List:**
 - Countries that are considered safe haven for supporting terror funding and money laundering are put in the FATF grey list.
 - This inclusion serves as a warning to the country that it may enter the blacklist.
- **Consequences of being in FATF Grey List:**
 - Economic sanctions from IMF, World Bank, ADB
 - Problem in getting loans from IMF, World Bank, ADB and other countries
 - Reduction in international trade
 - International boycott

Key highlights of the study conducted by FATF

- The Financial Action Task Force (FATF) has found that many countries are yet to fully implement its requirements aimed at preventing misuse of virtual assets and virtual asset service providers (VASPs).
- The study found that **India has already conducted a risk assessment covering virtual assets and VASPs.**
- The FATF is yet to evaluate and rate India's performance with respect to the revised standards on virtual assets and VASPs.
- The countries which have explicitly prohibited the use of virtual assets and VASPs are **China, Egypt and Saudi Arabia**, while it is in progress in Seychelles and Indonesia.
- The FATF said as virtual assets were inherently international and borderless, any failure to regulate VASPs in one jurisdiction could have serious global implications.
- The **FATF added that terrorist groups, including ISIL, Al Qaeda and their affiliates, as well as ethnically or racially motivated terrorist entities, are also known to be increasingly using virtual assets to raise and move funds globally.**

2. Why India must put Africa at the Heart of its Global South Vision

Context

- During her visit to Mauritius, **President Droupadi Murmu emphasised the importance of India's relations with African countries**, highlighting Mauritius as a key partner in the Indian Ocean Region.
- **This visit underscores India's growing engagement with Africa**, marked by collaborative efforts in community development and the inauguration of essential projects.
- **As India aims to strengthen its position within the Global South, it is crucial to understand the multifaceted relationship between India and Africa**, examining the opportunities it presents and the imperatives for deeper engagement.

An Analysis of the Depth and Significance of India's Engagement with Africa

- **Investments and Trade**
 - **India's investments in Africa have witnessed significant growth, reaching \$98 billion in 2023.**
 - This substantial investment reflects India's confidence in Africa's economic potential and its commitment to fostering long-term partnerships.
 - Similarly, **bilateral trade between India and Africa has surged, totalling \$100 billion.**
 - This trade encompasses a wide range of sectors, including agriculture, manufacturing, technology, and services, contributing to economic growth and diversification in both regions.
- **Developmental Projects**
 - These projects cover a diverse array of areas, such as infrastructure development, healthcare, education, agriculture, and renewable energy.

- **By investing in such projects, India not only promotes economic development in Africa but also strengthens diplomatic ties and goodwill between the two regions.**
- **Export of Scalable Solutions**
 - **India's expertise** in developing and implementing cost-effective, scalable solutions **has been instrumental in addressing various challenges faced by African nations.**
 - Indian social enterprises, NGOs, and government agencies have exported innovative solutions ranging from eco-friendly housing to solar energy technology.
 - **These initiatives not only contribute to poverty alleviation and sustainable development but also enhance India's reputation** as a reliable partner committed to sharing knowledge and resources for mutual benefit.
- **Mutual Prosperity and Development**
 - By leveraging each other's strengths and resources, **both regions stand to benefit economically and socially.**
 - India's investments create employment opportunities, stimulate economic growth, and facilitate technology transfer in Africa, while African markets provide India with access to natural resources, new markets, and strategic partnerships.
 - **This symbiotic relationship fosters economic resilience, innovation, and inclusive growth** in both India and Africa.

The Strategic Importance of India's Advocacy for Africa's Representation in Global Forums

- **To Amplify Africa's Representation and Voice**
 - India's advocacy for Africa's representation in global governance structures **underscores its commitment to amplifying the voices of developing nations.**
 - With Africa housing a significant portion of the world's population and contributing a substantial share of global GDP, ensuring its representation is essential for fostering a more inclusive and equitable international order.
 - **India's support for initiatives like the African Union's representation in the G20 demonstrates its recognition of Africa's importance** in shaping global agendas and policies.
- **A Push for Reform and Adaptation**
 - As the international landscape undergoes rapid transformation, **there is a growing recognition of the need to adapt governance mechanisms to address emerging challenges** and promote sustainable development.
 - India's advocacy for Africa's inclusion in global forums **reflects its commitment to reforming institutions like the United Nations, International Monetary Fund, and World Bank** to better represent the interests of developing nations.
- **To Build Strategic Partnerships**
 - **India's advocacy for Africa's representation in global governance is not merely altruistic but also strategic.**
 - Recognising Africa's growing influence in international affairs, India seeks to cultivate strategic partnerships with African nations to advance its own interests on the global stage.
 - **By supporting Africa's participation in decision-making processes, India enhances its diplomatic leverage** and strengthens its position as a leading voice within the Global South.
 - **This strategic alignment of interests offers mutual cooperation and solidarity** between India and Africa, amplifying their collective influence in shaping global agendas.
- **Development Agenda**
 - India's advocacy for Africa's representation in global governance is **closely aligned with its broader development agenda**, which prioritises poverty alleviation, sustainable development, and inclusive growth.
 - **By advocating for Africa's interests in global forums, India seeks to address systemic inequalities and promote policies** that benefit the most vulnerable populations.
 - This advocacy **encompasses a wide range of issues, including trade, finance, climate change, and peace and security**, reflecting India's commitment to fostering a more just and equitable world order.

Historical Ties between India and Africa and the Potential for Future Developments

• Colonial Legacy and Liberation Movements

- India's historical connections with Africa are **rooted in its own struggle for independence from colonial rule**.
- During the colonial era, India and many African nations shared similar experiences of exploitation and oppression under European colonial powers.
- **India played a significant role in supporting African liberation movements**, offering political, moral, and even material support to freedom fighters across the continent.
- **This shared history of anti-colonial struggle forms the basis of solidarity** and mutual understanding between India and Africa.

• Cultural and People-to-People Ties

- **The historical interactions between Indian traders, scholars, and missionaries with African societies have left lasting imprints** on both regions' cultures, languages, and traditions.
- Today, Indian communities thrive in various African countries, contributing to the cultural diversity and economic vibrancy of the continent.
- **These cultural connections serve as a bridge for deeper engagement** and collaboration between India and Africa.

• Development Cooperation and Technical Assistance

- **India's development cooperation with Africa traces its roots to the early days of independence**, when India extended technical assistance and capacity-building support to newly independent African nations.
- Over the years, **India has continued to prioritise Africa in its foreign policy agenda, helping in diverse fields** such as education, healthcare, agriculture, and infrastructure development.
- **This longstanding commitment to Africa's development reflects India's recognition of the continent's potential** and its desire to contribute to its progress.

• Future Prospects and Economic Opportunities

- As Africa emerges as a key hub of economic activity and innovation, **India stands to benefit from deepening its economic ties with the continent**.
- Leveraging its historical connections and cultural affinity, India can explore new avenues for trade, investment, and technology transfer in Africa.
- **Likewise, Africa can tap into India's expertise in areas such as information technology, pharmaceuticals, renewable energy, and agriculture** to fuel its own development trajectory.

• Geopolitical Realignment and Strategic Partnerships

- As traditional power centres undergo transformations, **India and Africa have an opportunity to forge closer strategic alliances** based on shared interests and values.
- By aligning their diplomatic efforts and leveraging their collective strengths, **India and Africa can play a more influential role in shaping the global agenda** and addressing common challenges such as climate change, terrorism, and pandemics.

Conclusion

- **India's multifaceted relationship with Africa offers significant opportunities** for economic, political, and social cooperation.
- As India seeks to assert its leadership within the Global South, **prioritising engagement with African nations is essential**.
- As the world undergoes rapid changes, **the synergy between India and Africa holds the promise of a mutually beneficial and prosperous future**.

3. Internet Freedom in India

Why in News?

For five years in a row, **India has topped the globe in imposing internet bans, accounting for over 60% of all blackouts reported between 2016 and 2022.**

Though the State imposed internet shutdowns in the last decade have cited national security and threats to public order, rights groups have criticised these shutdowns.

Internet Shutdowns in India:

- According to data collected by the Software Freedom Law Centre (SFLC), the Indian government imposed a **total of 780 shutdowns between 2014 and 2023.**
 - Data shows India shut down the internet for over 7,000 hours in 2023.
- Internet disruptions in India **accounted for more than 70% of total worldwide economic losses in 2020.**
- **Shutdowns increased during the protests** against the Citizenship Amendment Act in 2019, the abrogation of Article 370 in 2019, and the introduction of Farm Bills in 2020.
- **Regionally**, J&K saw the highest number of shutdowns (at 433) in the last 12 years.
 - **The longest blackout in 2023 took place in Manipur** from May to December, amid ethnic clashes.
 - As of February 15 this year, internet shutdowns were active in Haryana amid the farmers' protests.

Comparing India's Position with the Global Trends:

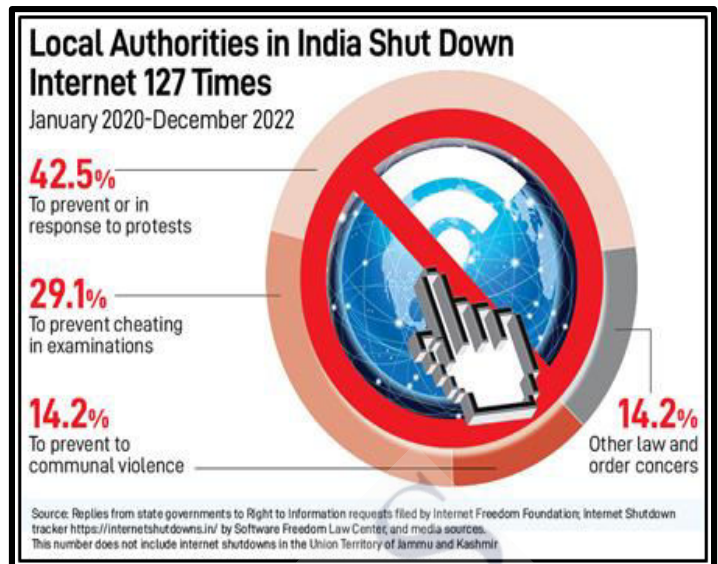
- According to the latest Freedom House report, **global internet freedom has declined** for the 13th consecutive year, and the environment for human rights online has deteriorated in 29 countries.
- The majority of internet outages in the last decade in India were **localised** to specific districts, cities and villages.
- **The trends differ globally:** protests are the most common reason for internet shutdowns, followed by information control and political instability.

Laws Invoked by the Union Government to Suspend Internet:

- According to the **Indian Telegraph Act**, Indian States and UTs can impose an internet shutdown only in case of a **"public emergency"** or in the interest of **"public safety"**.
 - **However, the law does not define what qualifies as an emergency or safety issue.**
- Between 2015 and 2022, the biggest share of content censored was done under **Section 69A of the IT Act** by the Ministry of Electronics and IT and the Ministry of Information and Broadcasting.
- URLs were blocked due to links to organisations banned under **the Unlawful Activities (Prevention) Act.**

Criticism of the Indian Government:

- The Union government **invoked powers under British-era laws** to suspend mobile internet as Punjab farmers are holding protests in Delhi.
- Activists have pointed out that **India failed to meet the 'three-part test'** in imposing blackouts in J&K and Manipur.
- **Under international law**, to block any access to content or invoke coercive measures that violate people's fundamental rights, countries should check -
 - If the action is provided for by law;
 - Pursues a legitimate aim; and
 - Follows standards of necessity and proportionality.



Way Ahead for the Indian Government:

- The Supreme Court, in the landmark **Anuradha Bhasin v. Union of India case**, reiterated that internet shutdowns **violate fundamental rights to freedom of expression**.
 - According to the apex court, **shutdowns lasting indefinitely are unconstitutional**.
- **Governments must make shutdown orders public**, a provision poorly complied with.

4. Conflict Between States and their Governors in the Matters of Lawmaking

Why in News?

The Kerala government recently approached the SC saying the President had withheld assent to 4 Bills passed by the state (but reserved by the Governor for consideration by the President) while disclosing no reason whatsoever.

This is the newest chapter in the conflict between states ruled by opposition parties, and their Governors, who are appointed by the President on the Centre's advice.

Governor's Role in Lawmaking and Where the Controversy Arise:

- **Article 200 of the Constitution** states that after a Bill has been passed by the state legislature, "it shall be presented to the Governor".
- **The Governor, then, has 3 options:** give assent to the Bill, withhold assent, or reserve the Bill for consideration by the President.
- **For situations where assent is withheld**, Article 200 states that the Governor may (as soon as possible) return the Bill together with a message requesting that the House or Houses will reconsider the Bill or any specified provisions thereof.
- **If the Bill is passed again** by the House or Houses with or without amendment and presented to the Governor for assent, **the Governor shall not withhold assent therefrom**.
- The latter part of the proviso **clearly gives the state government the final say** on enacting legislation.
- But it is the part saying "**as soon as possible after the presentation to him**", which has led to states approaching the SC.
 - **Since the article does not provide a timeline**, Governors have often withheld assent to Bills for extended periods, effectively leaving them and the state legislature in limbo.

President's Role in the Lawmaking Process of the State:

- **This is dealt with in Article 201.** In situations where a Bill is sent to the President for consideration, **the President can either give or withhold assent**.
- **If assent is withheld**, the President requests the Governor to return the Bill to the state legislature for reconsideration.
 - The state government then **has 6 months to reconsider the Bill** - failing to do so results in its lapsing.
 - If the Bill is passed once again by the state legislature, it **must be sent back to the President**. Unlike the Governor, **the President is under no obligation** to give assent when assessing the reconsidered Bill.
 - This is the only situation in which **state governments do not have the final say** in their own lawmaking process.

Petition of the Kerala Govt against the Governor and the President:

- The Kerala government's petition terms the actions of Governor and President as "**manifestly arbitrary**", i.e., an action that is **unreasonable, irrational and which violates the right to equality**.
- The petition argues that **the decision to keep Bills pending violates Article 200** by not making a decision "as soon as possible".

- **The Governor had “subverted the functioning”** of the state legislature and “rendered its existence itself ineffective”.
- The President’s decision to withhold assent to 4 of the Bills referred to her was done **without giving “any reason whatsoever”**.
 - **This is in violation of Article 201**, which states that the President is required to return the Bill with a message containing “such amendments as he may recommend”.

Situation in Other States:

- The SC (last year) expressed “serious concern” at **Tamil Nadu Governor’s** decision to withhold assent to 10 Bills that had been enacted by the state legislature, some of which were pending since 2020.
 - Three days later, all 10 Bills were returned for reconsideration, with no reasons given for the decision.
- The SC also criticised the TN Governor for **refusing to appoint K Ponmudy as the state’s Minister for Higher Education**, despite the apex court staying his criminal conviction.
- **The Telangana government** also approached the SC (in March 2023) over the former Governor's refusal to give assent to 10 Bills that were passed by its legislative assembly.
 - She gave her assent shortly after.
- **The Governor of Punjab** had refused to give assent to four Bills passed by the Punjab Assembly, claiming that the Bills were passed in breach of law and procedure.

SC Ruling and Way Ahead to Reduce Conflict:

- In (November) 2023, the SC held that **the Governor did not have the power to “thwart the normal course of lawmaking by the State Legislatures”**.
 - The phrase “as soon as possible” in Article 200 means that **the Governor cannot be at liberty to keep the Bill pending indefinitely** without any action whatsoever.
 - If the Governor decides to withhold assent, **s/he is bound to follow the procedure provided** in the Article 200.
- Though the court spelled out the obligations of the Governor in the lawmaking process, **it stopped short of providing a definitive timeline for the Governor to make the decision**.
 - The Kerala government has now approached the SC to address the same issue.

5. On Campaigning in the Name of Religion

Why in News?

Recently the BJP lodged a complaint with the Election Commission of India (ECI) against a prominent opposition leader for hurting the sentiments of Hindus through his remark on ‘shakti’.

The DMK, in turn, filed a counter complaint against the PM for appealing to religious sentiments during his campaign on the same issue.

What does the Representation of the People Act 1951 (RP Act) Say?

- **Section 123(3) of the RP Act** provides that appeals by a candidate or any other person, to vote or refrain from voting on the ground of his/her religion, race, caste, community or language is a **corrupt electoral practice**.
- Section 123(3A) **denounces any attempt by a candidate to promote feelings of enmity or hatred** among citizens on these grounds during elections.
- The RP Act further provides that anyone found guilty of corrupt electoral practice **can be debarred from contesting elections for a maximum period of up to six years**.

What does the Model Code of Conduct (MCC) Provide?

- The MCC for the guidance of political parties and candidates is a **set of norms which has evolved with the consensus of political parties**.

- Though the MCC has **no statutory backing**, it has grown in strength as a result of the ECI's strict enforcement since its implementation in the 1990s.
- This code provides that **no party or candidate shall indulge in any activity which may aggravate existing differences** or create mutual hatred or cause tension between different castes, religious or linguistic communities.
- It also provides that there shall be **no appeal to caste or communal feelings for securing votes**.
 - Mosques, churches, temples or other places of worship shall not be used as a forum for election propaganda.

History of Implementation of the RP Act and the MCC:

- **Before 1961**, Section 123(3) of the RP Act provided that **'systemic'** appeal by a candidate on the grounds of religion, race, caste or community would amount to a corrupt electoral practice.
 - However, in order to curb communal, fissiparous and separatist tendencies, **the word 'systemic' was omitted through an amendment in 1961**.
 - This meant that **even a stray appeal for success in the elections** on the ground of one's religion or narrow communal affiliation would be viewed with disfavour by the law.
- **There have been innumerable instances** in the past where various parties and its leaders have blatantly appealed for votes in the name of religion.
 - There are leaders across political parties against whom **cases have been registered under the RP Act and the Indian Penal Code in this regard**.
 - However, the only notable leader who was convicted by the **Supreme Court** for this corrupt electoral practice was **Bal Thackeray of Shiv Sena in the year 1995**.
- The ECI on such occasions at best **bars leaders from campaigning**, for violation of the MCC, for a short period of two to three days.

What has the SC Ruled in the *Abhiram Singh vs CD Commachen (2017)*?

- A 7-judge Bench by a majority of 4:3 held that candidates shall not appeal for votes on the basis of not just his/her religion but also that of the voters.
- The majority view provided a **'purposive interpretation'** to **Section 123(3)** rather than just a literal one.
- The apex court held that -
 - The elections to Parliament or State legislatures are a **secular exercise**.
 - Constitutional ethos forbids the mixing of religious considerations with the secular functions of the State.
 - **Religion should remain a matter of personal faith**.

Way Ahead for Political Parties and Candidates:

- **Political Parties and candidates are likely to raise legitimate concerns of citizens** faced by them on the basis of traits having origin in religion, caste, community or language in a democratic election process.
 - However, **it should be to only address their grievances** through appropriate policies without jeopardising the secular fabric and fraternity of the country.
 - Any appeal in the name of religion only results in the further **polarisation of India's multi-religious society**, disturbing the secular fabric of its polity and a clear violation of law.
- **Religious leaders have thrown their weight behind candidates of various parties**.
 - These practices should ideally be avoided in order to ensure that **politics and religion are not mixed up**.
 - However, the primary responsibility lies with political party leaders and candidates. Their campaigns on the basis of religion not only.
- **The ECI and courts should devise mechanisms** for swift action against those violating the law in this regard.

6. India – Bhutan Bilateral Relationship

Why in the News?

Prime Minister Narendra Modi on March 22, 2024, arrived in **Paro, Bhutan** for a 24-hour State visit.

India – Bhutan Bilateral Relationship:

- India and Bhutan share unique and exemplary bilateral relations, which are based on **mutual trust, goodwill and understanding**.
- Formal diplomatic relations between India and Bhutan were established in **1968**.
- The basic framework of India-Bhutan relations is the **Treaty of Friendship and Cooperation** signed in 1949 between the two countries, which was renewed in 2007.

Trade & Economic Ties:

- The **India-Bhutan Agreement on Trade, Commerce and Transit** – was first signed in **1972**.
- The agreement establishes a free trade regime between the two countries.
- **India is Bhutan's top trade partner both as an import source and as an export destination**.
- Since 2014, India's merchandise trade with Bhutan has almost tripled from USD 484 million in 2014-15 to USD 1422 million in 2021-22.
 - It accounting for about 80% of Bhutan's overall trade, with the balance of trade in India's favour.

Cultural & Buddhist Links:

- A number of Bhutanese pilgrims travel to **Bodh Gaya, Rajgir, Nalanda, Sikkim, Udayagiri, and other Buddhist sites in India**.
- As a part of the 50th anniversary celebration of diplomatic relations, GOI sponsored a visit by **18 Lam Netens (Buddhist monks)** and representative of the Central Monastic Body of Bhutan to India.

Hydropower Cooperation:

- Mutually beneficial hydro-power cooperation with Bhutan is a key pillar of bilateral economic cooperation.
- For Bhutan, **hydro-power development continues to be a vital catalyst for socio-economic development**.
- Revenues from Hydropower constitutes a significant portion of the total revenues of the Royal Government of Bhutan.
- The ongoing cooperation between India and Bhutan in hydro-power sector is covered under the 2006 bilateral agreement for cooperation and its Protocol signed in 2009.
- **Four hydro-electric projects (HEPs) totalling 2136 MW are already operational in Bhutan and are supplying electricity to India**.
- The 720 MW Mangdechhu was commissioned in August 2019 and handed over to Bhutan in December 2022.

New Areas of Cooperation:

- Apart from hydro-power cooperation and development partnership has moved into new and emerging areas with full interoperability of the flagship digital project RuPay, which has been successfully completed.
- **Bhutan became the second country to launch the BHIM app**, further deepening the financial linkages between our two countries.
- Space cooperation is a new and promising area of bilateral cooperation.
- The India-Bhutan SAT was launched into space in November 2022 by ISRO's Polar Satellite Launch Vehicle (PSLV).
- Inauguration of Ground Earth Station during visit of Chairman, ISRO also took place in March 2023.

Indians Working in Bhutan:

- About **50,000 Indian citizens are working in Bhutan**, mainly in the construction sector, education and technical consultants involved in infrastructure projects.

- Some Indian daily-workers also enter and exit Bhutan every day in the border towns, as a sign of the close economic interdependence between both countries.

Educational, Cultural Cooperation and People-to-People Exchanges:

- There is close bilateral cooperation in the educational and cultural fields between India and Bhutan.
- Over 950 scholarships are being provided annually by Gol for Bhutanese students to study in India in a wide range of disciplines including medicine, engineering, etc.
- It is estimated that approximately 4,000 Bhutanese are studying in undergraduate courses in Indian Universities on self-finance basis.
- Under the **Nehru Wangchuck Scholarship Scheme** since its inception in 2010, 8 slots are annually allotted to students and scholars from Bhutan.
- 20 slots are provided every year to students from Bhutan under the ICCR Scholarship.

PM Modi's State Visit to Bhutan:

- Prime Minister Narendra Modi on March 22, 2024, arrived in **Paro, Bhutan** for a 24-hour State visit.
- PM Modi will receive Bhutan's highest civilian award, the **Order of the Druk Gyalpo**.
- This is PM Modi's first visit since the award was announced in 2021, which will be presented Bhutan's King **Jigme Khesar Namgyel Wangchuck**, in appreciation for his efforts towards strengthening India-Bhutan ties.

7. Nuclear energy - fixing the finance

Why in news?

Recently, Brussels (Belgium) hosted the first-ever Nuclear Energy Summit. It co-chaired by the Prime Minister of Belgium and the Director General of the International Atomic Energy Agency (IAEA).

What's in today's article?

- Nuclear Energy Summit
- Financing of nuclear energy
- Cooperative funding models
- India's stand

Nuclear Energy Summit

• About

- This Summit is an initiative in collaboration with the IAEA's 'Atoms4Netzero' programme.
 - Atoms4NetZero is an **IAEA initiative** that supports efforts by Member States to harness the power of nuclear energy in the transition to net zero.
 - Launched during COP27, this initiative provides decision makers with data-driven energy scenario modelling.
- It is **part of the multilateral approach to decarbonisation**.

• Need

- The **UN Climate Change Conference (COP28) in Dubai (UAE) in December 2023 stated the indispensable role of nuclear energy to meet climate goals**.
 - The declaration signed by 22 world leaders mentioned the **need to triple nuclear energy capacity by 2050**.
- Nuclear power emits four times less carbon than solar farms or other renewable sources such as wind, hydropower, and geothermal.
- **Nuclear power has the capacity to supply uninterrupted energy irrespective of geographical constraints making it a crucial component of the wider renewable energy mix.**

- Nuclear power plants also have low operating costs, smaller land imprint and a longer life cycle compared to all the other renewable energy sources.

Financing of nuclear energy – a challenge

- Two key motives for the large-scale adoption of nuclear power as the base load energy source are **technology and finance**.
- Recent developments in nuclear technology **including Small Modular Reactors (SMR), radiation proofing in existing plants, and extended fuel cycles, have the potential to substantially mitigate nuclear-related risks**.
- However, in spite of technical advancements, Multilateral Development Banks (MDBs) and private investors have not made any significant contribution to the industry.
- The World Bank has not provided financing for a nuclear project since its \$40 million loan to Italy in 1959.
- There is a pressing need to reassess nuclear financing policies of MDBS to accommodate private capital or blended finance models.

Cooperative model to finance nuclear energy

- There are successful financial practices that can be replicated, for instance the cooperative funding models of France, South Korea, Russia, and the U.K.
- In this model, a group of investors raise credit from the market and take full responsibility for project delivery.
- **In Finland, large power plants have been funded by multiple private companies since the 1970s using a cooperative finance model called Mankala.**
 - Under this model, companies jointly own energy producers and share the costs of building and operating plants.
 - They do not pay dividends but can buy the energy at a cost based on their ownership share, with investors being wholesalers, retailers, or large industrial firms.

Status in India

- **Status**
 - **India's first commercial NPP in Pahalgarh, Tarapur offers reliable energy at 2/kWh lower than solar power tariffs.**
 - At Kudankulam, Tamil Nadu, a newer power plant offers electricity in the range of 4-6/kWh comparable to coal-fired thermal power plants.
 - Despite its versatile nature, nuclear power contributes only 1.6% of the total renewable energy mix in India.
- **Reasons for low adoption rate of nuclear energy**
 - Stigma, weaponisation risk, radiation leak, regulation, high upfront cost, and long project overruns
- **Prospects**
 - The nuclear industry has been undergoing novel liberalisation, with ambitious plans for growth in India and abroad.
 - Beginning with the invitation of \$26 billion in private investments, a phase-wise tripling of nuclear capacity from 7,480 MW to 22,480 MW by 2031-2032, and the core loading of the Prototype Fast Breeder Reactor (PFBR) all mark a positive future for the industry.
 - The PFBR's ability to generate fuel and power at the same time represents a significant advancement in India's mostly self-reliant nuclear industry.

8. India's Voters Deserve a Bond of Probity

Context

- **Laws and public policies are essential tools for addressing societal issues and improving conditions for citizens.**

- They should possess qualities such as lack of ambiguity, enforceability, predictability, and accountability and one such policy, the Electoral Bond Scheme (EBS), was aimed to reform political funding in India.
- After the Supreme Court verdict on EBS it becomes crucial to analyse the genesis, design, and demise of the EBS, assessing its effectiveness and implications.

Genesis and Evolution of the EBS

- **Acknowledgment of a Persistent Issue of Election Funding**
 - The genesis of the EBS can be traced back to the recognition of a longstanding problem in Indian democracy: the opacity of political funding and the pervasive influence of black money in elections.
 - The reluctance of donors to contribute through transparent means due to fear of adverse consequences emerged as a significant factor contributing to the opacity in political funding, necessitating urgent reform.
- **Proposal of Electoral Bond Scheme: Establishing a Clean Channel**
 - In response to the identified challenges, the finance minister proposed the EBS (in her 2017 Budget speech) as a solution to cleanse the system of political funding in India.
 - The primary objectives of the Electoral Bond Scheme were twofold: to enhance transparency and accountability in political financing and to curb the generation of black money.
 - The significance of the EBS lay in its potential to establish a clean channel for the flow of funds, replacing opaque methods with a transparent and accountable framework.
 - Despite its noble intentions, the EBS encountered challenges and criticisms regarding its design, implementation, and efficacy.
 - Concerns were raised about the adequacy of safeguards and the potential for misuse.

Design and Objectives of Electoral Bond Scheme

- **Legal Framework and Oversight**
 - The EBS was established within a legal framework outlined by the government, with provisions laid down in the Electoral Bond Scheme, 2018.
 - This framework provided guidelines for the issuance, purchase, and redemption of electoral bonds, as well as mechanisms for oversight and regulation.
 - The Reserve Bank of India (RBI) also played a role in regulating the scheme, ensuring compliance with banking regulations and standards.
- **Evaluation and Review**
 - The design of the EBS incorporated provisions for evaluation and review to assess its effectiveness in achieving its objectives.
 - Periodic assessments and reviews were intended to identify any shortcomings or loopholes in the scheme and make necessary adjustments to improve its efficacy.
- **Facilitating Transparent Transactions**
 - Central to the design of the EBS was the facilitation of transparent transactions between donors and political parties.
 - By allowing individuals and organisations to purchase electoral bonds from designated banks, the scheme provided a structured mechanism for channelling funds.
 - These bonds could then be donated to political parties of the donor's choice, thereby formalizing the process of political contributions.
- **Anonymity for Donors**
 - One of the key features of the EBS was the provision for anonymity for donors.
 - While the scheme required purchasers to provide KYC (Know Your Customer) details to the banks at the time of purchasing bonds, the identity of the donor remained confidential.
 - This anonymity was intended to encourage more individuals and entities to contribute to political parties without fear of repercussions or adverse consequences.

- **Curbing Black Money**

- **Another objective of the EBS was to curb the generation and circulation of black money in political financing.**
- By formalising the process of political donations and mandating transactions through banking channels, the scheme aimed to reduce the reliance on cash donations and opaque funding mechanisms.
- **The expectation was that by introducing transparency and accountability into the system, the prevalence of black money in elections would diminish.**

Reasons Behind the Demise and Criticisms of the EBS

- **Confidentiality and Lack of Transparency**

- One of the primary criticisms levelled against the EBS was its **provision for donor anonymity, which undermined transparency in political financing.**
- While the scheme aimed to formalize political contributions and channel funds through banking channels, the confidentiality clause prevented meaningful scrutiny of donor identities.
- **This lack of transparency raised concerns about the potential for misuse** and the inability to track the sources of funds effectively.

- **Potential for Misuse and Corruption**

- **The confidentiality clause of the EBS also raised concerns** about the potential for misuse and corruption within the political system.
- Critics argued that the anonymity afforded to donors could be exploited to funnel illicit funds to political parties, circumventing regulations, and oversight mechanisms.
- **This raised questions about the integrity of the electoral process** and the susceptibility of the scheme to abuse for ulterior motives.

- **Inadequate Safeguards and Oversight**

- Another critique of the EBS was **the perceived lack of adequate safeguards and oversight mechanisms** to prevent misuse and ensure accountability.
- **The scheme's design did not incorporate robust mechanisms** for monitoring and regulating political contributions, leaving room for manipulation and malpractice.
- The absence of stringent oversight contributed to doubts about the scheme's efficacy in curbing black money and enhancing transparency in political financing.

- **SC Intervention and Disclosure Mandates**

- **The SC's intervention further highlighted the shortcomings of the EBS and underscored the need for transparency** and accountability in political financing.
- Court-mandated disclosures and directives compelled greater transparency regarding donor identities and the sources of political contributions.
- **However, these measures also exposed the inadequacies of the scheme** and the challenges inherent in reconciling donor anonymity with transparency and accountability.

Way Forward

- **Parliament Not Court Should Find Solutions**

- **Parliament, as the supreme legislative body, possesses the "superior" wisdom** necessary to navigate complex issues such as political financing.
- **Just as Parliament is entrusted with appointing Election Commissioners,** it is also tasked with devising solutions to challenges in electoral processes.
- **A reasonable path forward can only be achieved through a collaborative and consultative process** involving all stakeholders.

- **Consultative Process Over Judicial Fiat**

- **Court interventions, while sometimes necessary, should not substitute for legislative action.**

- Laws and policies crafted in secrecy or through judicial mandates may lack the legitimacy and effectiveness needed to address complex and multifaceted problems.
- **Instead, an inclusive and transparent consultative process allows for diverse perspectives to be considered and ensures that solutions are grounded** in democratic principles.
- **Upholding Probity and Integrity**
 - At the heart of the argument is **the need to uphold probity and integrity in political financing.**
 - The essay highlights the importance of political parties accepting clean money rather than relying on funds obtained through dubious means.
 - **It is the responsibility of political parties to prioritise transparency** and accountability in their financial dealings.

Conclusion

- The EBS aimed to reform political funding in India by promoting transparency and accountability, **however, its design flaws, including the confidentiality clause and lack of transparency regarding donor identities, undermined its effectiveness.**
- **The scheme's demise highlights the complexities of addressing systemic issues such as black money in politics** and underscores the need for comprehensive and transparent reforms in political financing.
- Ultimately, **the responsibility lies with Parliament to devise solutions that ensure probity and fairness in electoral processes.**

9. Ties That Epitomise India's Neighbourhood First Policy

Context

- **The relationship between Bhutan and India, despite vast differences in size and population, has been characterised by mutual respect, trust, and cooperation** over the past five decades.
- This enduring friendship has been founded on principles of equality, mutual benefit, and shared interests.
- The recent developments, including the **Gelephu project and hydropower cooperation, underscore the depth and strength of this strategic partnership.**

The Bedrock of India-Bhutan Five Decade Old Ties

- **Mutual Respect and Equality**
 - Despite India's significant size and population in comparison to Bhutan, **both nations have treated each other as equals.**
 - **Bhutan's unique identity, cultural heritage, and religious practices have been respected and preserved by India.**
 - Similarly, **Bhutan acknowledges India's role in supporting its economic development** while safeguarding its sovereignty and identity.
- **Cultural and Religious Respect**
 - **India has consistently respected Bhutan's rich cultural heritage** and unique religious practices.
 - Despite India's status as a diverse and culturally rich nation itself, it has acknowledged and preserved Bhutan's distinct identity.
 - **This respect is evident in India's support for Bhutan's endeavours to maintain its cultural traditions** and preserve its heritage sites.
- **India's Respect Towards Bhutan's Sovereignty and Autonomy**
 - **Bhutan's sovereignty and autonomy have been paramount in the bilateral relationship.**
 - India has refrained from imposing its influence or interfering in Bhutan's internal affairs, respecting its status as a sovereign nation.

- **This respect for Bhutan's autonomy has fostered trust and cooperation** between the two countries, allowing Bhutan to pursue its development goals independently.
- **Economic Cooperation on Equal Terms**
 - Despite India's economic dominance in the region, its **cooperation with Bhutan has been based on mutual benefit and equal partnership.**
 - India has provided economic assistance and investment opportunities to Bhutan without imposing conditions or expecting undue influence in return.
 - **This approach has allowed Bhutan to leverage its resources effectively** and pursue sustainable development pathways.
- **Frequent Political Dialogue and Collaboration**
 - **Both countries engage in regular consultations and discussions** on various regional and global issues, recognising each other's perspectives and interests.
 - This open and transparent communication has **strengthened the bonds of trust and friendship between the two nations.**
- **Security and Strategic Cooperation**
 - **India's security cooperation with Bhutan is grounded in mutual respect** for each other's security concerns and interests.
 - India has provided strategic support to Bhutan, including assistance in maintaining border security and defending its territorial integrity.
 - **In return, Bhutan has cooperated closely with India on security matters,** contributing to regional stability and peace.

Ongoing Cooperation Exemplifying India-Bhutan Strategic Partnership

- **The Gelephu Mindfulness City Project**
 - The proposed project in **southern Bhutan represents a significant milestone in the bilateral relationship.**
 - Emphasising sustainability, well-being, and environmental concerns, the project aims to attract foreign investment and promote economic prosperity.
 - **India, including its business entities, is expected to play a pivotal role in the project's success.**
 - Moreover, the focus on human well-being, including yoga, spa therapies, and mental relaxation channels, aligns with Bhutan's commitment to holistic development.
- **Hydropower Cooperation**
 - Hydropower cooperation has been the **cornerstone of India-Bhutan relations,** providing clean electricity to India and revenue to Bhutan.
 - Despite successful collaborations, challenges have emerged in implementing new joint venture models for hydro projects.
 - **There is a need to reassess the existing models and develop more practical and successful approaches** to ensure continued cooperation in the energy sector.
- **Development Assistance**
 - **India has been a key development assistance partner to Bhutan,** contributing significantly to its economic growth and infrastructure development.
 - The partnership emphasises the priorities of the Bhutanese people, ensuring that projects directly benefit them.
 - **This approach reflects the mutual commitment to prosperity** and sustainable development.

Future Measures and Opportunities to Deepen India-Bhutan Ties

- **Direct Flights and Connectivity**
 - **Initiating direct flights between major Indian cities like Mumbai and Delhi with Gelephu can significantly enhance connectivity** and facilitate business, tourism, and trade exchanges.

- Improved air connectivity can streamline travel logistics, encourage greater interaction between people, and promote economic activities in Gelephu and its surrounding regions.
- **Technology Transfer and Infrastructure Development**
 - **India can contribute to the success of the Gelephu Mindfulness City Project by sharing its expertise** in building hard infrastructure and implementing sustainable urban development practices.
 - Collaborative efforts in technology transfer, urban planning, and infrastructure development can accelerate the project's implementation and ensure its long-term viability.
- **Tourism Promotion and Business Ventures**
 - **Encouraging high-end Indian tourists and businesspersons to visit Gelephu can stimulate economic growth** and generate revenue for local businesses.
 - India can facilitate promotional campaigns, organize familiarisation tours, and incentivise investments in tourism-related infrastructure to attract Indian visitors and investors to Gelephu.
- **Private Sector Engagement and Investment**
 - India's private sector can play a pivotal role in driving economic growth and development in Gelephu through investments in various sectors, including hospitality, real estate, healthcare, and technology.
 - **Encouraging Indian businesses to set up operations in the city can create employment opportunities**, foster innovation, and contribute to the overall prosperity of Bhutan.
- **Socio-economic Spillovers and Regional Development**
 - The success of the Gelephu Mindfulness City Project is expected to have positive socio-economic spillover effects, not only for Bhutan but also for neighbouring regions in West Bengal and Assam.
 - **India can leverage these opportunities to promote cross-border trade**, infrastructure development, and people-to-people exchanges, thereby enhancing regional cooperation and integration.
- **Long-term Sustainability and Collaboration**
 - **It is essential to prioritise long-term sustainability and collaboration** in all future measures and initiatives between India and Bhutan.
 - **This involves fostering a conducive environment for dialogue, cooperation, and mutual learning, as well as addressing challenges** and opportunities in a proactive and collaborative manner.

Conclusion

- The enduring friendship and **strategic partnership between India and Bhutan serve as a model for international relations** based on mutual respect, trust, and cooperation.
- **The Gelephu project and hydropower cooperation exemplify the shared commitment to sustainable development** and economic prosperity.
- As both nations continue to collaborate on various fronts, **the relationship is poised to flourish further, benefiting not only India and Bhutan but also the broader region.**

10. How is Defamation Defined under the Indian Law

Why in News?

The Supreme Court restrained a trial court from proceeding with a defamation case against Delhi Chief Minister for retweeting a YouTube video against the BJP's IT cell.

How is Defamation Defined under the Indian Law?

- Under Indian law, defamation can be a **civil wrong or a criminal offence**.
- **Civil defamation** can be libel (through writing) or slander (spoken word), and is based on tort law (law imposing civil liability).
 - It is punishable with **financial compensation**, and damages are computed based on probabilities.

- In criminal cases, defamation must be proven beyond reasonable doubt. **Section 499 of the Indian Penal Code (criminal defamation) says:**
 - “Whoever, by words or by signs or by visible representations, makes or publishes any imputation concerning any person intending to harm the reputation of such person, is said to defame that person.”
 - Criminal defamation **can attract a jail term up to two years**, with or without fine (Section 500 IPC).

The SC Verdicts on Defamation and the Right to Free Speech:

- **Subramanian Swamy vs. Union of India (2016):** The SC upheld the constitutionality of IPC Sections 499 and 500. It held that -
 - The right to reputation is protected under **Article 21** (Protection of life and personal liberty) of the Constitution,
 - And that criminal defamation is a reasonable restriction on the right to freedom of expression.
 - While **Article 19(1)(a)** of the Constitution protects the right to speech and expression, **Article 19(2)** allows the state to impose “reasonable restrictions” on this right in the interest of
 - Sovereignty and integrity of India,
 - The security of the State,
 - Friendly relations with Foreign States,
 - Public order, decency or morality or in relation to contempt of court, defamation or incitement to an offence.
- **Kaushal Kishore vs Union of India (2017):** The SC ruled that no additional restrictions can be imposed on free speech except those under Article 19(2).
- **Shreya Singhal vs. Union of India (2015):** The SC quashed Section 66A of the IT Act 2000, which had criminalised sending “offensive messages” by means of “a computer resource or a communication device”. This provision was quashed -
 - In view of the ambiguity in the definition of the term “offensive”, and
 - On the ground that the provision was violative of Article 19(1)(a) and not saved under Article 19(2).

What is the Recent Case and What has SC Ruled?

- **The SC was hearing the Delhi CM’s challenge to a Delhi HC order** upholding the summons issued to him in a criminal defamation case for retweeting an allegedly defamatory video posted by a YouTuber in 2018. **The HC had observed that -**
 - **Retweeting a content** which is allegedly defamatory on the Twitter account and projecting it to be as if his own views, will prima facie attract the liability under Section 499 of IPC.
 - The large social media following of a CM undoubtedly implies a wider reach, making any retweet a form of public endorsement or acknowledgment.
- **The SC ruled that retweeting need not always mean endorsement.**

11. The Case for One Nation, One Election

Context

- In a nation as vast and diverse as India, **the frequency of elections poses significant challenges to governance and development.**
- Therefore, it becomes crucial to delve into **the multifaceted aspects of the proposition to hold simultaneous elections, exploring historical precedents**, pressing problems, debunking myths, and charting a way forward.

The Historical Context of Indian Democracy and Simultaneous Elections

- **Simultaneous Elections in Early Indian Democracy**

- India's journey towards democratic governance began in the aftermath of its independence in 1947 and **central to this framework was the concept of periodic elections to determine the composition of legislative bodies** at both the national and state levels.
- The nascent years of Indian democracy witnessed simultaneous elections to the Lok Sabha (House of the People) and various state assemblies.
- **The inaugural general elections held in 1951-52 set the precedent for concurrent polls, a practice that persisted through subsequent electoral cycles in 1957, 1962, and 1967.**
- During this period, India successfully managed to synchronize its electoral processes, demonstrating the feasibility and efficacy of holding simultaneous elections.
- **How Synchronised Electoral Processes Benefitted**
 - **The concurrent conduct of elections during this era was not merely a logistical convenience but also a reflection of the cohesive vision** of the nation's founding fathers.
 - By aligning the electoral calendars of the central and state governments, India aimed to foster unity and coherence in its democratic institutions.
 - **This synchronised approach helped minimise disruptions to governance and provided a stable platform** for policy formulation and implementation.
- **Transition to Fragmented Electoral Schedule**
 - However, as India's democratic experiment evolved, **the simultaneous conduct of elections gradually gave way to a fragmented electoral schedule.**
 - Various factors, including constitutional amendments, political realignments, and regional dynamics, contributed to the divergence in electoral timelines.
 - **Consequently, India transitioned to a model where elections to the Lok Sabha and state assemblies were often held at different intervals,** leading to a disjointed electoral landscape.

A Detailed Analysis of Challenges Posed by Frequent Elections in India

- **Governance Problem**
 - Frequent elections in India **pose significant challenges that impact various aspects of governance and development.**
 - These challenges stem from the asynchronous nature of electoral cycles, leading to a range of issues that hinder effective governance and strain resources.
- **Continuous Rise in Election Expenses**
 - **The staggering rise in election expenses over the years underscores one of the primary challenges** posed by frequent elections.
 - The cost of conducting elections has escalated substantially, with the expenses for the Lok Sabha elections tripling between 2009 and 2014.
 - **Despite the absence of data for the 2019 elections, it is anticipated that the costs continued to rise.**
 - These escalating expenses strain the financial resources of the government, diverting funds that could otherwise be allocated to critical developmental projects and welfare initiatives.
- **Impact by Prolonged Enforcement of the Model Code of Conduct (MCC)**
 - Moreover, **the prolonged enforcement of the MCC due to asynchronous elections exacerbates the challenges** faced by governance machinery.
 - The MCC, which is enforced once elections are announced, restricts the government's ability to initiate new policies, programs, or developmental projects.
 - **Consequently, the governance machinery is often paralysed, unable to undertake essential activities during the election period.**
 - This leads to delays in crucial decision-making processes and hampers the delivery of public services, adversely affecting the welfare of citizens.
- **Challenges Due to Reallocation of Manpower and Human Resource**

- Additionally, **frequent elections necessitate the deployment of significant human resources**, further straining the administrative machinery.
- **Law enforcement agencies**, such as the CRPF and police personnel, **are mobilised to ensure the security and conduct of elections**.
- Moreover, government employees from various departments and schools are reassigned from their regular duties to assist with election-related tasks.
- **This reallocation of manpower disrupts the functioning of essential services** and diverts human resources away from core governance activities, impacting overall efficiency and service delivery.

Myths Surrounding One Nation, One Election

- **Simultaneous Elections Would Marginalise Local Issues**
 - **One prevalent myth suggests that simultaneous elections would render local issues irrelevant**, thereby undermining regional representation and autonomy.
 - Proponents of this view argue that **elections for state assemblies and the Lok Sabha are fought on different issues**, with regional parties focusing on local concerns while national parties prioritize broader, national issues.
 - However, **empirical evidence contradicts this notion**.
 - An analysis of vote share percentages from past elections reveals that voters differentiate between state and national issues, irrespective of the timing of elections.
 - For instance, **the BJP's vote share in state assembly polls conducted simultaneously with the 2019 general elections was lower than its performance in the latter**, indicating that voters distinguish between state and national concerns.
 - Thus, the fear that simultaneous elections would marginalize local issues is unfounded and misleading.
- **Threat to Federal Democracy**
 - Critics argue that **synchronising elections would centralise power and undermine the federal structure of governance**, infringing upon states' autonomy.
 - However, **historical precedent and constitutional principles suggest otherwise**.
 - India's founding fathers envisaged a robust federal democracy, wherein states enjoy considerable autonomy within the framework of a unified nation.
 - **The simultaneous conduct of elections during the early years of Indian democracy did not compromise federalism** but rather facilitated administrative efficiency and national cohesion.
 - Moreover, **synchronising elections does not entail a shift towards a presidential form of government**; instead, it streamlines the electoral process without altering the fundamental principles of India's parliamentary democracy.

Way Forward

- **Legislative Amendments and Synchronisation Efforts**
 - One proposed approach involves legislative amendments **to mandate simultaneous elections to the Lok Sabha and state assemblies**.
 - This would require constitutional amendments and statutory changes to synchronize the electoral calendars of the central and state governments.
 - **Additionally, efforts would be needed to harmonise the legal framework governing elections, including the Model Code of Conduct**, campaign financing regulations, and electoral dispute resolution mechanisms.
- **Unified Voter List and Technological Integration**
 - **Furthermore, the creation of a single, unified voter list has been proposed to streamline voter registration and eliminate discrepancies** between the lists maintained by the Election Commission of India (ECI) and state election commissions.
 - This would entail a comprehensive data integration effort to consolidate voter information from various sources and ensure accuracy and completeness.

- **Leveraging technology and data analytics could facilitate this process**, enabling real-time updates and verification of voter records.
- **Pilot Projects and Phased Implementation**
 - Additionally, **pilot projects and phased implementation strategies could be employed to test the feasibility and efficacy of simultaneous elections** in select states or regions.
 - This would allow for practical experimentation, evaluation of outcomes, and refinement of processes before scaling up to a national level.
 - **Learning from international best practices and experiences of countries that have successfully implemented simultaneous elections can also inform India's approach** and implementation strategy.

Conclusion

- The proposition of holding simultaneous elections in India **presents a viable solution to the myriad challenges posed by frequent electoral cycles.**
- By streamlining the electoral process, **India can enhance governance efficiency, optimize resource allocation, and bolster democratic principles.**
- **Embracing this reform requires informed discourse and concerted efforts at both the national and state levels,** ultimately paving the way for a more robust and resilient democracy.

12. On judges and bureaucrats joining politics

Why in news?

Recently a Calcutta High Court judge and a senior IPS officer in West Bengal resigned from their posts and joined political parties. This has brought up concerns about whether it's right for constitutional authorities and government officials to join political parties after they leave their jobs.

Existing Constitutional restrictions

- **Rationale – principle of checks and balance**
 - The **Constitution works on the principle of checks and balance between various organs.** The executive is accountable to the legislature.
 - **An independent judiciary keeps a check on both these branches of the State.**
 - There are also other independent bodies like the **Election Commission, Public Service Commission, CAG who are required to perform their constitutional duties without any interference from the government.**
 - The independence of these institutions is ensured through guaranteeing fixed tenure, financial independence, stringent removal procedure and restrictions after demitting office.
- **Existing constitutional restrictions**
 - A judge of a Supreme Court after ceasing to hold office cannot appear as a lawyer before any court or authority in India.
 - A judge of a High Court has similar restrictions except for appearance before the Supreme Court or other High Courts.
 - The CAG and the chairman/members of the Public Service Commission cannot take up any other employment with Central or State governments after demitting office.
 - **These restrictions are laid down to avoid favouritism,** during the period of holding such positions, towards the government in power with an intent of securing any post-retirement benefit.

Restrictions on gaining political posts

- **No such restrictions**
 - **There are no restrictions when it comes to joining political parties, contesting elections or being nominated to certain posts.**

- There are notable instances of persons who held independent constitutional posts and later went on to join politics or were nominated to various posts.
- **Examples**
 - There **have been two Supreme Court judges in 1967 and 1983, who resigned from their posts to contest the presidential and parliamentary elections from Assam, respectively.**
 - Another Supreme Court judge joined a political party in Tamil Nadu and contested elections five years after his retirement in 1999.
 - **A former Chief Election Commissioner became a Rajya Sabha member and Minister in 2004, three years after his retirement.**
 - Recently, a retired Chief Justice of India was nominated to the Rajya Sabha in 2020 within four months of his retirement.
 - There have also been occasions where retired CAG and judges have been appointed as Governors of States.
 - Numerous bureaucrats have also joined political parties and contested elections after resigning from service or soon after their retirement.

Various recommendations and cooling off period

- **The Election Commission (EC) had in 2012 recommended to the Union government to provide for a cooling-off period for top bureaucrats after their retirement before they could join political parties and contest elections.**
- However, the **Government had rejected this recommendation** based on the opinion of the Attorney General that this may not be in line with constitutional provisions and democratic values.
- The Supreme Court had dismissed a writ petition in May 2022 that sought a direction from the top court to the legislature to frame a law imposing a cooling-off period for retired bureaucrats before joining politics.
 - The court observed that it is for the legislature to determine whether a cooling-off period is required for bureaucrats before they join politics after retirement.

Arguments against the cooling off period

- One of the essential features of a democracy is every citizen's right to contest elections.
- **The Attorney General while providing his opinion against the 2012 recommendation of EC had said that maintenance of independence and neutrality will be relevant during the period a person is in service.**
- There are rules at present which restrict a senior bureaucrat from joining a private job for **at least one year** after he or she retires from government service.
- Such restriction for commercial employment is based on intelligible differentia to avoid conflicts of interest.
- However, such a restriction against officials contesting polls may not be a valid classification and would not be in harmony with democratic principles in the Constitution.

Conclusion

Justice should not only be done but should also be seen to be done. This applies equally to judges, independent constitutional authorities and senior bureaucrats. Extending this principle even after they demit office will have a salutary effect. This may be achieved by prescribing a cooling-off period for joining political parties or being nominated to political posts by the government. This will instil confidence in the public at large and negate any allegation of quid pro quo.

13. Bribes for votes case - SC says MLAs and MPs not immune from prosecution

Why in news?

- **A seven-judge Constitution Bench of the Supreme Court said that Members of Parliament and state legislatures who take bribes to vote or speak in a certain manner in the House are not immune from prosecution.**

- With this judgement, the apex court has overruled its 1998 judgment (JMM bribery case) which granted immunity to such lawmakers.

Privileges and Immunities to the MPs and MLAs:

- **Meaning: Privileges are special rights, immunities and exemptions enjoyed by the two Houses of Parliament and legislature of States, and their committees and their members.**
 - The Constitution has also extended these privileges to those persons who are entitled to speak and take part in the proceedings of a House or any of its committees.
 - For example, **the Attorney General of India.**
- **Constitutional provisions: Article 105 and Article 194 to the Constitution of India** grant privileges or advantages to the MPs (Article 105) and to the MLAs (Article 194) of every State.
 - These powers, privileges and immunities should be **defined by the law** from time-to-time.
 - These privileges are considered as **special provisions** and have an overriding effect in conflict.
 - It must be clarified here that these privileges **do not extend to the President** (or Governor) who is also an integral part of the Parliament (or state legislature).
- **Privileges mentioned in the Constitution:**
 - It gives the MPs **freedom of speech** [Article 115 (1)].
 - It provides that **no MP will be liable** to any proceedings before any Court for anything said or any vote given by him/her in the Parliament or any committee thereof [Article 105(2)].
 - Also, **no person will be held liable for any publication of any report, paper, votes or proceedings** if the publication is made by the parliament or any authority under it.
 - The same provisions are stated under **Article 194**, where MLAs of a state are referred instead of MPs.
- **Purpose:** These privileges and immunities -
 - Are granted so that MPs/MLAs can perform their duties or can function properly without any hindrances - essential for democratic functioning of the legislatures.
 - Without these privileges,
 - The Houses can neither maintain their authority, dignity and honour.
 - Nor can protect their members from any obstruction in the discharge of their parliamentary responsibilities.
- **Difference between Article 19 and Article 105:**
 - Both the Articles, (Article 19(1)(a) and Article 105) of the Constitution talks about freedom of speech.
 - **Article 105 applies to the members of parliament not subjected to any reasonable restriction. But, Article 19(1)(a) applies to citizens and is subject to reasonable restrictions.**
 - This means, Article 105 is **an absolute privilege** given to the members of the parliament but this privilege can be used **in the premises of the parliament** and not outside the parliament.

Background of the present case

- **1998 P.V. Narsimha Rao Case**
 - In 1993, Jharkhand Mukti Morcha (JMM) leader Shibu Soren and some of his party MPs were accused of taking bribes to vote against the no-confidence motion against the then P V Narasimha Rao government.
 - The apex court (by a 3:2 majority) **granted immunity** from prosecution to MPs who took bribes and voted to save the then Congress government in Parliament.
 - The SC held that legislators enjoy immunity from criminal prosecution for bribery in matters connected to their speech and votes in Parliament and Legislative Assemblies.
- **Matter reached Supreme Court again**
 - An MLA from the JMM, Sita Soren, was accused of accepting a bribe in return for her vote for a candidate during the 2012 Rajya Sabha elections.
 - **She moved the Jharkhand HC** for quashing the chargesheet and criminal proceedings against her, relying on the provisions of Article 194 (2), but the HC had declined to do so.

- As a result, she appealed in the Supreme Court
- **1998 Judgement referred to larger bench**
 - In March 2019, SC observed that the decision in P.V. Narasimha dealt directly with such cases.
 - However, the bench took note of the fact that the case was decided by a narrow margin (a 3:2 split among the five judges) and stated that the issue was a matter of substantial public importance.
 - As a result, they referred the matter to a larger bench.
 - In September 2023, a five-judge bench led by CJI Chandrachud demarcated three issues that needed to be reconsidered from the case and referred the case to a seven-judge bench.

News Summary: Bribes for votes case

Key highlights of the current judgement

- **No immunity on the charges of accepting bribe**
 - An individual member of the legislature cannot assert a claim of privilege to seek immunity under Articles 105 and 194 from prosecution on a charge of bribery in connection with a vote or speech in the legislature.
- **Accepting bribes do not pertain to the duties of lawmakers**
 - Accepting a bribe is a **separate crime** that is not linked to the actions or words of a lawmaker within the Parliament or legislative assembly.
 - Therefore, the immunity provided under Articles 105 and 194 does not extend to cases of bribery, as these do not pertain to the duties of lawmakers.
- **Threat to the functioning of Indian parliamentary democracy**
 - The court cautioned that granting such protection would create a group of individuals who enjoy unregulated exemption from the law.
 - It emphasized that **corruption and bribery by legislators have the potential to undermine the functioning of Indian parliamentary democracy.**
 - Such a claim to immunity fails to fulfill the two-fold test:
 - that the claim is tethered to the collective functioning of the House and
 - that it is necessary to the discharge of the essential duties of a legislator.
- **On the question of when the offence of bribery is considered as complete**
 - The court stated that the bribery is considered complete once the offer or agreement to bribe is made, regardless of whether the vote is cast in the agreed direction or if the vote is cast at all.



General Studies-III

1. Kunming-Montreal Global Biodiversity Framework (GBF)

Why in news?

Recently, a symposium on the rights of indigenous people was organised by the University of Arizona. It focused on how the Global Biodiversity Framework and India's Forest (Conservation) Amendment Act of 2023 will impact tribes.

Kunming-Montreal Global Biodiversity Framework (GBF)

- **About**

- This **framework was adopted during the 15th meeting of the Conference of the Parties, or COP15, to the UN Convention on Biological Diversity in December 2022.**
- It aims to support the achievement of the sustainable development goals and build on previous strategic plans.
- It sets a bold path towards global harmony with nature by 2050.
- In adopting the GBF, all parties committed to setting national targets to implement it.

- **Goals and targets**

- The GBF consists of **23 targets** (set for 2030) and **four global goals**(set for 2050) to preserve biodiversity for current and future generations.
- The **targets address reducing threats to biodiversity, meeting people's needs through sustainable use and benefit-sharing, and tools and solutions for implementation and mainstreaming.**

- **Legal nature**

- GBF is not an international treaty and is therefore not legally binding on Parties.
- It also doesn't require a mandatory system that forces parties to step up their efforts at a specific time.

Target 3 of the Kunming-Montreal GBF

- **About**

- Target 3 of the GBF is to ensure that at least 30% of the world's land, waters, and seas are conserved by 2030.
 - At present, protected areas (PAs) cover about 16%.
- This **target is also known as the "30 by 30" target.**

- **Controversy**

- As per analysts, this target seems harmless but often benefit corporations over indigenous communities, especially in Southeast Asia.
 - In **Indonesia's Ujungkulon National Park, indigenous people lack basic rights like housing, health, and education.**
 - Similarly, in Cambodia's Beng Per Wildlife Sanctuary, an indigenous leader, Heng Saphen, was unfairly convicted for farming on her own land.
- Involving the private sector in forest conservation is a bad idea.
 - Analysts pointed out that India has taken a step in this direction with the Forest (Conservation) Amendment Act to 2023.
 - **The act includes zoos, safaris, ecotourism facilities, etc., as forest activities.**
 - According to experts, protected areas were first made for leisure and hunting by colonial elites.
 - The concept has not changed much. Today, ecotourism projects still treat indigenous people like exhibits.

What would GBF mean for India?

- **About 84% of India's national parks (89 out of a total of 106) were established in areas inhabited by the indigenous peoples and meeting the GBF targets will threaten their existence.**
- E.g., the initiative to upgrade the **Kumbhalgarh Wildlife Sanctuary in Rajasthan** to a tiger reserve will affect 162 tribal villages located inside and outside the sanctuary.
- Similarly, the expansion of the **Nauradehi Sanctuary in Madhya Pradesh** is set to affect 62 villages of mostly tribal people.
- In Assam, the June 2022, notification for the Barak Bhuvan Wildlife Sanctuary will affect the Khasis, Dimasas, and other indigenous groups.
 - The gazette notification states that the sanctuary is free from encroachment as per record, there are no rights and concessions of any person in the area.
 - However, the Khasis possess documents showing they have been living in the area since 1914.

What can be done to protect the tribal lands?

- A global agreement like the Kunming-Montreal GBF can't be changed, but India must update its policies.
- **Role of tribals as guardians**
 - It should acknowledge the right to free, prior, and informed consent as per the **Panchayats (Extension to Scheduled Areas) Act**.
 - Additionally, laws should be amended to make tribal communities guardians of protected areas, as they have historically protected nature due to their close ties with forests and wildlife.
- **Creation of protected areas in non-tribal areas**
 - If tiger reserves can be created in areas where there are no tigers such as Sahyadri (Maharashtra), Satkosia (Odisha), Kamlang (Arunachal Pradesh), Kawal (Telangana), and Dampa (Mizoram), there is no reason why PAs cannot be created in non-tribal areas.
- **Address human rights violations in the PAs seriously**
 - India ought to address human rights violations in the PAs seriously.
 - Human rights issues of these people such as access to education, healthcare, and housing cannot be left to the Wildlife or Forest Department.

2. Understanding India's Coal Imports

Context

- In recent years, **the spectre of electricity shortages has loomed large over India** as hot weather exacerbates the demand for power.
- While the discourse surrounding **this issue often focuses on the shortage of domestic thermal coal and the necessity of imports**, a closer examination reveals deeper challenges related to logistics and regulatory interpretation.
- **So, it is important to analyse these aspects highlighting the complexities of the situation and explore solutions** to address the underlying issues.

Major Reason Behind the Shortage of Domestic Thermal Coal: Logistical Challenges

- **Inadequate Transportation Infrastructure**
 - One of the key issues is the **inadequate transportation infrastructure**, particularly the railway network, which is responsible for the bulk of coal transportation in India.
 - While coal mines may produce significant quantities of coal, **the capacity of the railway network to transport it to power plants in a timely manner is often constrained**.
 - This results in delays and inefficiencies in coal delivery, exacerbating shortages during periods of high demand.
- **Geographical Distribution Challenges**

- Moreover, **the geographical distribution of coal mines and power plants adds another layer of complexity** to the logistics challenge.
- Many power plants, especially those located in regions far from coal mines, face greater difficulties in securing a reliable supply of coal.
- **The transportation distance increases the time and cost involved in coal delivery**, making these plants more vulnerable to shortages, particularly during peak demand periods.
- **Storage and Handling Infrastructure**
 - Furthermore, **the storage and handling infrastructure at both coal mines and power plants are often insufficient to cope** with fluctuations in demand and supply.
 - Inadequate storage capacity can lead to stockpiling issues at mines or plants, further exacerbating delays in coal delivery.

Conflict Between the Idea of Alternative Domestic Coal Sources, Necessity of Imports and Its Implications

- **Alternative Domestic Sources and the Idea of Imports**
 - Alternative sources of coal, **such as auctions conducted by Coal India Ltd., offer a domestic solution that is often overlooked in favour of imports.**
 - Coal auctions provide an opportunity for power plants to procure coal domestically, albeit at potentially higher prices compared to coal obtained through other channels.
 - **Despite this, auctions present a viable alternative to imports**, especially for plants that do not face logistical constraints in accessing coal from auction sites.
 - However, the discourse tends to focus solely on imports as the default solution to address coal shortages.
 - **This narrow perspective overlooks the potential of domestic alternatives** and fails to consider the broader implications of relying heavily on imported coal.
- **Cost Implications of Imports**
 - **Importing coal incurs additional costs**, including transportation, handling, and import duties, which ultimately increase the variable cost of coal-based electricity.
 - **These costs are often passed on to consumers** through higher electricity tariffs, placing a burden on households and industries alike.
- **Regulatory Misinterpretation and Mandates**
 - Moreover, **interpreting Ministry of Power advisories recommending coal imports as mandates further exacerbates the conflation** between alternative sources and imports.
 - While the advisories may suggest importing up to a certain percentage of coal, they should not be misconstrued as mandatory requirements.
 - **Rather, they should be viewed as guidelines to be carefully considered in the context of each power plant's specific circumstances.**
- **Less Focus on Domestic Procurement Improvement**
 - Furthermore, **the emphasis on imports overlooks the potential for improving domestic coal procurement** and distribution processes.
 - By addressing logistical challenges and streamlining administrative procedures, **India can enhance the efficiency and reliability of its domestic coal supply chain**, reducing the need for costly imports.

Regulatory Consideration in Shaping the Response to Electricity Shortages and Coal Procurement Strategies

- **Address Misinterpretation of Advisories**
 - One of the challenges in regulatory considerations is the **potential misinterpretation of advisories issued by government agencies**, such as the Ministry of Power.
 - These advisories may provide recommendations or guidelines for addressing coal shortages, including suggestions for coal imports. **However, they should not be automatically interpreted as mandates.**

- Misinterpreting advisories as mandates can lead to unnecessary costs and burdens on consumers, as power plants may feel obligated to comply with import recommendations even if domestic alternatives are available.
- **Far-sightedness in Regulatory Decision-Making**
 - Regulatory bodies responsible for overseeing electricity generation and distribution must exercise forward thinking in their decision-making processes.
 - **They should carefully assess the implications of regulatory measures** on stakeholders, including consumers, power producers, and distribution utilities.
 - **This requires thorough analysis of the costs and benefits associated with different coal procurement strategies**, considering factors such as transportation costs, import duties, and environmental considerations.
- **Tailored Approaches for Different Plants**
 - Furthermore, **regulatory bodies should recognise that not all power plants face the same challenges** when it comes to coal shortages.
 - Plants located closer to coal mines, known as pit-head plants, may have easier access to domestic coal and face fewer logistical constraints.
 - **In contrast, plants located farther away from mines may rely more heavily on imported coal** and face greater challenges in securing a reliable supply.
 - Regulatory measures should, **therefore, be tailored to the specific circumstances of each plant, rather than applying a one-size-fits-all approach.**
- **Balancing Cost and Reliability**
 - A key consideration for regulators is striking the right balance between cost and reliability in electricity supply.
 - **While imports may offer a quick solution to coal shortages, they come with significant costs that ultimately impact consumers.**
 - Regulators must carefully weigh the potential cost savings of domestic procurement against the reliability and security of imported coal supply.
 - **This requires robust cost-benefit analysis and consultation with industry stakeholders** to ensure that regulatory decisions are transparent and equitable.
- **Long-Term Planning and Sustainability**
 - Finally, **regulatory considerations should also take into account long-term planning and sustainability**
 - While addressing immediate coal shortages is important, regulators must also consider the broader implications of coal procurement strategies on energy security, environmental sustainability, and the transition to renewable energy sources.
 - **This requires a forward-looking approach that balances short-term needs with long-term sustainability goals**, ensuring that regulatory decisions support India's transition to a more resilient and sustainable energy system.

Conclusion

- The discourse surrounding electricity shortages in India **requires a nuanced understanding of the logistical challenges and regulatory considerations at play.**
- **While coal imports may seem like a quick fix, they come with significant costs and do not address the underlying issues** of logistics inefficiencies.
- By addressing the root causes of shortages and adopting targeted solutions, **India can navigate the challenges of power generation more effectively in the face of changing weather patterns and growing demand.**

3. WTO's Investment Facilitation Negotiations Are Not Illegal

Context

- The 13th Ministerial Conference (MC13) of the World Trade Organisation (WTO) in Abu Dhabi witnessed a significant development with **the non-adoption of the agreement on investment facilitation for development (IFD).**
- Despite considerable support, including from around 120 member countries, **the IFD Agreement faced opposition, notably from India and South Africa.**
- Amid these developments, **it is important to understand India's stance against the IFD Agreement and concerns regarding its compatibility with WTO principles,** particularly regarding the nature of investment within the realm of trade and the process followed in negotiating the agreement.

Understanding the IFD Agreement

- **Despite opposition from countries such as India, negotiations for an IFD agreement at the WTO were launched in 2017 on a plurilateral basis** by 70 countries.
- This was done through a process known as the Joint Statement Initiative. The IFD agreement was finalised in November 2023.
- **Today, around 120 of 166 WTO member countries (more than 70% of the membership) back the IFD agreement.**
- This agreement aims to create legally binding provisions to facilitate investment flows.
- **The IFD Agreement, among other things, will require states to augment regulatory transparency, and streamline administrative procedures** to bolster foreign investment inflows.
- Importantly, this agreement does not contain provisions on market access, investment protection, and **investor-state dispute settlement (ISDS).**
- **ISDS, which allows foreign investors to bring treaty claims against the state admitting investment, has been a contentious issue** in recent years.

Reason Behind India's Opposition to IFD Agreement

- Given the existing structure of the WTO's dispute settlement mechanism, where only states can bring legal claims against other states, **it is implausible that ISDS can be a part of it.**
- **India and South Africa played a crucial role in not letting the IFD agreement become a part of the WTO rulebook.**
- India does not seem to be exceedingly concerned about the text of the IFD agreement.
- Instead, India's principal concerns are twofold. First, the question of whether investment can be part of the WTO. And second, the process followed to make the IFD agreement a part of the WTO rulebook.

India's Concerns with IFD Agreement at WTO's 13th Ministerial Conference (MC13)

- **Investment and its Relationship with Trade**
 - **India's Stance Challenges the Rethinking of Investment-Trade Nexus**
 - India's contention regarding the relationship between investment and trade **reflects a nuanced understanding of the evolving dynamics shaping international commerce.**
 - While traditional economic perspectives often portray investment and trade as inherently intertwined, **India's stance challenges this conventional wisdom by highlighting the diverse nature of investment activities** and their implications for cross-border trade.
- **The Proposed Role of Investment in Global Economics**
 - **At the heart of India's argument lies the recognition that investment, though integral to global economic activities, does not always lead to the immediate facilitation** of cross-border trade.
 - **Unlike trade in goods and services, which involve the exchange of tangible or intangible products, investment encompasses a broader spectrum of activities,** ranging from capital injections into foreign enterprises to the acquisition of assets in overseas markets.

- **These investment activities may not always result in immediate trade flows**, especially in cases where investments are made for strategic or long-term purposes, rather than for the explicit purpose of engaging in trade.
- **Linkage of Global Value Chains and Investment-Trade**
 - Furthermore, **India points to the complexities of global value chains (GVCs) to underscore the multifaceted nature** of investment-trade linkages.
 - While it is undeniable that GVCs rely on both trade and investment to facilitate the seamless movement of goods and services across borders, India argues that the relationship between the two is not always straightforward.
 - **Investment in GVCs** often serves to enhance production efficiencies, reduce costs, and access new markets, but **may not necessarily translate into direct trade activities**.
 - Particularly in cases where intermediate inputs are destined for domestic consumption or further processing within the host country.

Concerns with the Process of Negotiating the IFD Agreement

- **Procedural Concerns in IFD Agreement Negotiations**
 - **India's opposition to the IFD Agreement also encompasses procedural concerns** regarding the negotiation process.
 - India asserts that there was no mandate for conducting negotiations on investment within the WTO framework.
 - **This assertion is grounded in previous WTO decisions**, such as the 2004 General Council decision, which excluded discussions on trade and investment from the Doha Round of negotiations.
 - **India contends that this decision implicitly signalled a reluctance to engage in negotiations** on investment-related matters within the WTO framework.
- **Consensus Requirement and Legitimacy of Negotiations**
 - Moreover, **India points to the consensus requirement for launching multilateral negotiations on new issues**, as outlined in the 2015 WTO Nairobi ministerial decision.
 - This decision emphasised the necessity of unanimous agreement among WTO members to initiate negotiations on novel topics.
 - **India argues that since there was no consensus among all members to launch negotiations on an IFD Agreement**, the subsequent negotiations and the text that emerged are legally questionable.
- **Upholding WTO Integrity and Transparency**
 - **India's objection raises fundamental questions about the legitimacy of negotiating agreements outside the established framework** of WTO mandates.
 - By invoking past decisions and procedural requirements, India underscores the importance of adhering to established norms and principles in shaping global trade governance.
 - **This stance reflects India's commitment to upholding the integrity of the WTO's decision-making processes** and ensuring that negotiations are conducted transparently and inclusively.
- **Scope and Mandate of WTO Negotiations**
 - Furthermore, **India's concerns extend beyond mere procedural objections to broader questions about the scope and mandate of WTO negotiations**.
 - India contends that discussions on investment-related matters were explicitly excluded from previous rounds of negotiations, suggesting a reluctance among members to address such issues within the WTO framework.
 - **This reluctance underscores the need for clarity regarding the scope of WTO negotiations and the parameters** within which member states can engage in discussions on novel topics.

Conclusion

- India's opposition to the IFD Agreement at the WTO **reflects broader debates surrounding the intersection of investment and trade**, as well as procedural intricacies within the organisation.

- While concerns regarding the nature of investment and the negotiation process are valid, **reconciling divergent perspectives is essential for fostering consensus** and advancing global trade governance.
- As the WTO seeks to navigate evolving trade landscapes, **engaging constructively with initiatives like the IFD Agreement can contribute to revitalising its legislative function and addressing contemporary trade challenges.**

4. India's Employment Conditions Continue to be Poor: Report

Why in News?

The International Labour Organisation (ILO) and the Institute of Human Development (IHD) have jointly published a report titled "**India Employment Report 2024**".

About International Labour Organisation:

- The ILO was created in 1919, as part of the **Treaty of Versailles** that ended World War I, to reflect the belief that universal and lasting peace can be accomplished only if it is based on social justice.
- In 1946, the ILO became a **specialized agency of the United Nations.**
- The ILO is devoted to promoting social justice and internationally recognized human and labour rights, pursuing its founding mission that labour peace is essential to prosperity.
- **Headquarters:** Geneva, Switzerland

Objectives of ILO:

- The ILO has **four strategic objectives:**
 - **Promote and realize standards and fundamental principles and rights at work,**
 - Create greater opportunities for women and men to decent employment and income,
 - Enhance the coverage and effectiveness of social protection for all, and
 - **Strengthen tripartism and social dialogue.**

Membership of ILO:

- The ILO has **187** state members.
- India is a **founding member of the ILO** and it has been a permanent member of the ILO Governing Body since 1922.
- The ILO constitution permits any member of the UN to become a member of the ILO.
- To gain membership, a nation must inform the director-general that it accepts all the obligations of the ILO constitution.

About Institute of Human Development (IHD):

- The Institute for Human Development (IHD) was established in the year **1998** under the aegis of the **Indian Society of Labour Economics (ISLE).**
- It **aims to contribute towards building a society that fosters and values an inclusive social, economic and political system that is free from poverty and deprivations.**
- It undertakes research in the areas of labour and employment, livelihood, gender, health, education and other aspects of human development.

About India Employment Report 2024:

- The India Employment Report 2024 is the **third in the series** of regular publications by the Institute for Human Development on labour and employment issues.
- It is **undertaken in partnership with the International Labour Organization (ILO).**

- The report examines the challenge of youth employment in the context of the emerging economic, labour market, educational and skills scenarios in India and the changes witnessed over the past two decades
- The report highlights recent trends in the Indian labour market, which indicate improvements in some outcomes along with persisting and new challenges, including those generated by the COVID-19 pandemic.

Key Highlights of the India Employment Report 2024:

- The report is primarily based on analysis of data from the National Sample Surveys and the Periodic Labour Force Surveys between 2000 and 2022.
- **Employment Trends & Current Scenario:**
 - The **female labour market participation rate**, after declining significantly in the earlier years, took to a faster upward trend as of 2019, particularly in rural areas.
 - One of the most significant features of the Indian labour market is a slow and steady transition of the workforce away from agriculture and into the non-farm sectors.
 - Employment in India is predominantly self-employment and casual employment.
 - **Nearly 82 per cent of the workforce engages in the informal sector, and nearly 90 per cent is informally employed.**
 - While wages of casual labourers maintained a modest upward trend during 2012–22, real wages of regular workers either remained stagnant or declined.
 - The migration levels in India are not adequately captured through official surveys.
 - The rates of urbanization and migration are expected to considerably increase in the future.
 - India is expected to have a migration rate of around 40 per cent in 2030 and will have an urban population of around 607 million.
- **Challenges of Youth Employment:**
 - **A large proportion of the population is of working age, and India is expected to be in the potential demographic dividend zone for at least another decade.**
 - But the country is at an inflexion point because the youth population, at 27 per cent of the total population in 2021, is expected to decline to 23 per cent by 2036.
 - Each year, around 7–8 million youths are added to the labour force whose productive utilization could lead to India reaping a demographic dividend.
 - Youth participation in the labour market has been much lower than among adults and was on a long-term (2000–19) declining trend, primarily due to greater participation in education.
 - Youth unemployment increased nearly threefold, from 5.7 per cent in 2000 to 17.5 per cent in 2019 but declined to 12.1 per cent in 2022.
 - After the lockdowns, the youth labour market indicators recovered quite quickly.
 - But this movement was accompanied by additions to the labour force and workforce, primarily in poor-quality work.
- **Suggestions:**
 - **The report highlights five key policy areas for further action, which apply more generally and also specifically for youth in India:**
 - promoting job creation;
 - improving employment quality;
 - addressing labour market inequalities;
 - strengthening skills and active labour market policies; and
 - bridging the knowledge deficits on labour market patterns and youth employment.

5. New Collective Quantitative Goal

Why in news?

Climate experts believe that the **focus of this year's climate change conference in Baku, Azerbaijan (COP 29 scheduled for November 11-24) will be on finance.**

As per them, the expression that is likely to be heard most frequently at COP29 is NCQG — or New Collective Quantitative Goal (on finance).

Background

- **2022 Climate change conference (COP 27)**

- The 2022 climate change conference in **Sharm el-Sheikh** decided to set up a **Loss and Damage Fund** to help developing countries recover from climate disasters.

- **Dubai conference 2023 (COP 28)**

- The last year conference was all about Global Stocktake (GST), a review of ongoing climate action.
- This resulted in the first ever explicit acknowledgment of the need to transition away from fossil fuels, and a promise to triple global renewable energy capacity by 2030.

- **COP29 at Baku, Azerbaijan**

- Experts believe this year's focus will be on climate finance.

New Collective Quantitative Goal (NCQG)

- **About**

- **NCQG is a term for the extra money that rich countries need to gather each year starting from 2025. This money is meant to support actions against climate change in poorer countries.**
- It has to be more than the \$100 billion that rich countries promised to collect each year starting from 2020, but didn't manage to do.

- **Status of NCQG**

- NCQG is extremely important for developing countries, and discussions on this new amount have been ongoing for a couple of years at least.
- At a recently concluded two-day meeting in Copenhagen, Denmark— the first minister-level climate meeting for this year — some technical work to arrive at the NCQG was finalised.

How much money is required to ensure effective climate action?

- Assessments of current financial requirements run into several trillions of dollars every year.

- **Estimates by the secretariat of the UNFCCC**

- In 2021, the secretariat of the UNFCCC said in a report that developing countries would require a total of about \$6 trillion annually between then and 2030 just to implement their climate action plans.
- An updated version of that report is supposed to come out later this year, and is expected to raise this figure much higher.

- **Final agreement at Sharm el-Sheikh (COP 27)**

- It estimated that a global transition to a low-carbon economy would likely require about \$4-6 trillion every year until 2050.

Challenges in climate financing

- The biggest hurdle to a significant scale-up in global climate action is the unavailability of adequate finance, especially in developing countries.
- The scale of annual climate finance flows has always been considerably less than the \$100 billion.
 - \$100 billion is the amount that the developed countries had promised to mobilise every year from 2020 onward.
- But even if that amount were being made available, it would be only a small fraction of the money that is required to enable actions that would keep the world on the 1.5 degree Celsius pathway at least until 2030.
- Climate finance flows are currently **heavily skewed in favour of mitigation actions**.
- However, developing countries have been demanding that more money be made available for adaptation and other activities.

India's stand on climate financing

- India has called for developed countries to provide at least \$1 trillion per year in climate finance to developing countries from 2025, primarily in the form of grants and concessional finance.
- **G-20 New Delhi Leader's Declaration also recognizes the substantial financial requirements essential for the world's successful transition to a renewable energy-driven economy.**
- The Declaration notes the need for \$ 5.8-5.9 trillion in the pre-2030 period.

Conclusion

Unlike the \$100 billion figure, which was offered without any consultations, the NCQG will be the result of negotiations, and countries will have better control over compliance.

The way the new sum is distributed across different kinds of needs — mitigation, adaptation, loss and damage, and several others — will be a deciding factor in the fight against climate change.

6. The WTO is Having an Existential Crisis

Context

- **The 13th biennial ministerial meeting of the World Trade Organization (WTO)** recently concluded amid much anticipation.
- However, the meeting ended without substantial progress, leaving **several critical issues unresolved.**
- **So, it is crucial to assess the challenges faced by WTO member countries, focusing on the impasse surrounding public stockholding (PSH) programs,** subsidies for industrial shipping fleets, and the dysfunctionality of the dispute settlement mechanism (DSM).

An Analysis of Points of Contention at the WTO Ministerial Meeting

- **Public Stockholding (PSH) Programs**
 - One of the primary points of contention at the ministerial meeting was **the debate over countries' rights to implement PSH programs,** aimed at purchasing, stockpiling, and distributing food to citizens in need.
 - While acknowledging this as a sovereign right, **WTO rules impose constraints, particularly regarding trade-distorting domestic subsidies.**
 - The outdated assessment criteria, based on the average price of the base years 1986-88, pose **challenges for countries like India, making it difficult to sustain PSH programs.**
 - Despite the peace clause established in 2013, **providing temporary legal immunity to India's MSP policy, efforts for a permanent solution were blocked** at the recent meeting, largely due to opposition from agricultural exporting nations such as the US.
- **Subsidies for Industrial Shipping Fleets**
 - Another critical issue left unresolved at the **ministerial meeting pertains to regulating subsidies provided by industrialised nations** to their shipping fleets, contributing to overcapacity and over-fishing (OCOF).
 - **This practice has led to the depletion of fishing stocks,** posing a severe threat to marine ecosystems.
 - Despite calls from countries like India for binding rules to curb these subsidies, **the meeting failed to adopt any substantive measures,** largely due to the influence of wealthier nations.
- **Dysfunctionality of the DSM**
 - **The breakdown of the DSM,** a cornerstone of the WTO's regulatory framework, represents yet another setback highlighted at the ministerial meeting.
 - **Since 2019, the DSM has been paralysed by the US's obstructionism,** particularly in appointing members to the Appellate Body.
 - **Despite reaffirmations of commitment to restoring a functional DSM by 2024, the prospects remain bleak,** with the US showing no willingness to revive its previous form.

US Strategy and the De-Judicialization of Trade Multilateralism and Its Implications

- **Response to Geo-Economic Challenges**
 - The US's stance within the WTO can be **understood within the context of its response to emerging geo-economic challenges**, notably the rise of China.
 - As China asserts itself as a dominant economic player on the global stage, **the US perceives a need to recalibrate its approach to international trade governance.**
 - By de-emphasising the role of international courts, particularly the Appellate Body of the WTO's dispute settlement mechanism, the US aims to assert greater unilateral control over trade policy decisions.
- **Reassertion of National Sovereignty**
 - **Underlying the US strategy is a broader narrative of reasserting national sovereignty** in the realm of trade policy.
 - **The proliferation of international trade agreements and the expansion of supranational institutions have raised concerns** among certain segments of the US political establishment regarding the erosion of national autonomy.
 - By obstructing the functioning of the WTO's dispute settlement mechanism, **the US seeks to reclaim decision-making authority** and safeguard perceived national interests.
- **Critique of Judicial Overreach**
 - The US's stance on the WTO's dispute settlement mechanism **can also be interpreted as a critique of perceived judicial overreach.**
 - Critics argue that international adjudicatory bodies, such as the Appellate Body, have exceeded their mandate and encroached upon the policy prerogatives of sovereign states.
 - **By limiting the authority of these bodies, the US aims to rebalance the distribution of power within the WTO framework** and prevent what it perceives as judicial activism.
- **Unilateral Response to Trade Imbalances**
 - In addition to geopolitical considerations, **the US's strategy within the WTO reflects a broader shift towards unilateralism** in addressing trade imbalances and economic grievances.
 - The Trump administration, in particular, adopted a confrontational approach to trade relations, employing tariffs and other unilateral measures to assert US interests.
 - **By undermining the effectiveness of multilateral dispute resolution mechanisms, the US retains greater flexibility** to pursue unilateral trade actions without international oversight.
- **Implications for Global Trade Governance**
 - The US's strategy of de-judicialization carries significant implications for the future of global trade governance.
 - By weakening the institutional mechanisms of multilateralism, the US risks exacerbating fragmentation and instability in the international trading system.
 - Moreover, **the erosion of trust in the WTO's dispute settlement mechanism undermines the credibility of the institution, potentially leading to further challenges** in resolving trade disputes and negotiating new agreements.

Ways Ahead for India Amid Challenges Within the WTO Framework

- **Diversification of Support Mechanisms**
 - Rather than solely relying on PSH programs, **countries can diversify their support mechanisms for farmers.**
 - This may involve **bolstering existing income support schemes, such as the Pradhan Mantri Kisan Samman Nidhi in the case of India.**
 - By providing direct financial assistance to farmers, these schemes can help alleviate income volatility and mitigate the need for trade-distorting domestic subsidies.
- **Investment in Agricultural Infrastructure**
 - Another alternative approach is to prioritise investment in agricultural infrastructure and technology.
 - **By modernising farming practices, improving irrigation systems, and enhancing access to credit and markets, countries can increase agricultural productivity and competitiveness.**

- Moreover, investments in research and development can lead to the development of drought-resistant crops and sustainable farming techniques, reducing reliance on subsidies for income support.
- **Promotion of Sustainable Agriculture**
 - Countries can also focus on promoting sustainable agricultural practices that prioritize environmental conservation and resource efficiency.
 - **This may involve incentivizing farmers to adopt organic farming methods, agroforestry, and integrated pest management techniques.**
 - By aligning agricultural policies with sustainability objectives, countries can enhance their resilience to climate change while complying with WTO rules on environmental protection.
- **Market Diversification and Value-Added Products**
 - To reduce dependency on government support and mitigate the impact of trade restrictions, countries can explore opportunities for market diversification and value addition in agricultural products.
 - This may include the **promotion of niche crops with high export potential, the development of food processing industries, and the establishment of agricultural cooperatives** to enhance bargaining power in global markets.
 - By focusing on value-added products, farmers can capture greater value from their produce and reduce vulnerability to price fluctuations.
- **Strengthening of Agricultural Extension Services**
 - A critical component of alternative approaches is the **strengthening of agricultural extension services and farmer education programs.**
 - By providing farmers with access to information, training, and technical assistance, countries can enhance their capacity to adopt innovative practices, improve productivity, and adapt to changing market dynamics.
 - Additionally, **extension services can facilitate knowledge-sharing and peer-to-peer learning, fostering a culture of innovation and resilience** within the agricultural sector.

Conclusion

- **The outcomes of the 13th WTO ministerial meeting** underscore the deepening existential crisis facing trade multilateralism.
- **The inability to address critical issues such as PSH programs, subsidies for industrial shipping fleets, and the dysfunctionality of the DSM reflects broader systemic challenges** within the WTO framework.
- As countries grapple with increasing uncertainty and volatility in the global trading system, **the imperative for meaningful reform and collective action becomes ever more pressing.**

7. Navigating the Global Waterscape, Its Challenges

Context

- March 22, 2024 marks the **31st World Water Day, emphasising the theme of Leveraging water for peace.**
- On this day, it is **important to analyse the complexities of water scarcity, historical conflicts over water resources, the importance of water diplomacy,** and the need for transboundary cooperation to ensure sustainable water management.

Historical Context of Water Conflicts

- Throughout the history, **water has stood as a crucial asset for some of humanity's most significant civilizations,** exemplified by those flourishing along the banks of the Indus, the Nile, and the Tigris-Euphrates.
- However, **these civilisations also witnessed conflicts stemming from this vital resource, as evidenced by the well-documented disputes between Mesopotamian cities like Lagash and Umma.**
- Remarkably, **this historical event also produced what is recognised as the world's inaugural peace accord, known as the Treaty of Mesilim,** marking one of humanity's earliest legal agreements.

The Need for Water Diplomacy

• To Create a Collaborative Governance

- Water diplomacy **emphasises the importance of collaborative governance** mechanisms to address shared water challenges effectively.
- By bringing together relevant stakeholders, including governments, local communities, non-governmental organizations (NGOs), and international agencies, collaborative governance frameworks **enable dialogue, information sharing, and joint decision-making processes.**
- **These mechanisms facilitate the development of sustainable water management** policies and strategies that consider the needs and interests of all stakeholders.

• To Ensure Equitable Water Allocation

- **Central to water diplomacy is the principle of equitable water allocation** among riparian states.
- Recognising that water resources do not adhere to political boundaries, **water diplomacy seeks to ensure fair and just distribution of water resources**, considering the needs, rights, and vulnerabilities of all parties involved.
- **Through negotiated agreements and treaties, riparian states can establish frameworks for sharing water resources**, managing competing demands, and resolving disputes peacefully.

• Regional Stability and Peace

- Effective water diplomacy **contributes to regional stability and peace by reducing the risk of conflicts** over shared water resources.
- By **fostering cooperation and mutual understanding among neighbouring states, water diplomacy helps build trust**, enhance security, and mitigate tensions arising from water-related disputes.
- Moreover, collaborative water management initiatives can promote cross-border cooperation, economic integration, and diplomatic relations, thereby contributing to broader efforts to maintain peace and stability in conflict-prone regions.

• Inclusive Approaches

- In addition to governmental actors, **water diplomacy involves engaging a diverse range of stakeholders, including indigenous communities**, civil society organisations, academic institutions, and private sector entities.
- **Inclusive approaches to water diplomacy recognise the valuable contributions and perspectives of marginalised groups**, promote social equity, and ensure that decision-making processes are transparent and participatory.
- By incorporating local knowledge, cultural practices, and community priorities into water management strategies, **inclusive water diplomacy enhances the legitimacy and effectiveness of governance frameworks.**

• Conflict Prevention and Resolution

- **Water diplomacy plays a crucial role in preventing and resolving conflicts** arising from competing water interests.
- **Through proactive diplomacy, early warning systems, and confidence-building measures, riparian states can address potential sources** of tension and defuse conflicts before they escalate into violence.
- **Moreover, mechanisms for peaceful dispute resolution, such as arbitration, mediation, and joint monitoring, enable states to resolve water-related disputes** through dialogue and negotiation, rather than resorting to coercive or confrontational measures.

Key Strategies to Address Rural Water Needs in India

• Infrastructure Development

- One of the primary approaches to addressing rural water needs is through the **development of water infrastructure, including wells, hand pumps, boreholes, and piped water supply systems.**
- Investing in the construction and maintenance of such infrastructure can improve access to safe drinking water and sanitation facilities in rural areas, thereby reducing the burden of waterborne diseases, and improving overall health outcomes.

- **Community Participation**
 - **Engaging local communities in the planning, implementation, and management** of water projects is critical for ensuring their sustainability and success.
 - **Community-based approaches, such as participatory water management committees and user associations, empower rural residents to take ownership** of water resources, promote efficient water use practices, and resolve conflicts over water access and usage.
- **Water Conservation and Management**
 - **Promoting water conservation and management practices is essential for maximising the efficiency and sustainability** of water resources in rural areas.
 - **This includes initiatives such as rainwater harvesting, groundwater recharge, watershed management, and soil moisture conservation techniques.**
 - **By conserving water and enhancing its availability during dry periods, rural communities can reduce reliance** on unpredictable water sources and build resilience to climate variability.
- **Technological Innovation**
 - **Leveraging technological innovations can significantly improve** water access and management in rural areas.
 - For example, **the use of solar-powered pumps, drip irrigation systems, and water-efficient technologies can enhance agricultural productivity** while minimising water usage.
 - Similarly, mobile-based applications and remote sensing technologies can facilitate real-time monitoring of water quality and availability, enabling timely interventions and resource allocation.
- **Government Support and Policy Interventions**
 - **Government support and policy interventions play a vital role** in addressing rural water needs.
 - **This includes allocating sufficient funding for water infrastructure projects, implementing regulatory frameworks to ensure equitable water distribution,** and enacting legislation to protect water resources and promote sustainable water management practices.
 - **Moreover, policy coherence across sectors such as agriculture, health, and environment is essential** for addressing the complex interlinkages between water, food security, and rural development.

Significance and Strategies of Effective Transboundary Water Management

- **Significance of Transboundary Water Governance**
 - Transboundary water resources, such as rivers, lakes, and aquifers, play a crucial role in sustaining ecosystems, supporting livelihoods, and promoting economic development across borders.
 - **Shared water bodies often serve as a vital source of freshwater for drinking, agriculture, industry, and energy production, making effective governance essential** to ensure equitable access, minimize conflicts, and promote sustainable development.
- **Strategies for Effective Transboundary Water Management**
 - Strengthening diplomatic efforts, dialogue platforms, and institutional mechanisms for cooperation among riparian states can be useful strategies.
 - **There is a need for investment in institutional capacity building, technical expertise, and knowledge sharing** to facilitate joint management of transboundary water resources.
 - Moreover, developing and implementing robust legal frameworks, treaties, and agreements that define rights, responsibilities, and mechanisms can be useful strategies for dispute resolution among riparian states.

Conclusion

- **Addressing water scarcity and promoting cooperation are imperative** for global peace and prosperity.
- **Through water diplomacy, inclusive governance, and transboundary cooperation, nations can mitigate conflicts, ensure sustainable water management, and achieve the Sustainable Development Goals.**
- As the world commemorates World Water Day, **there should be a renewed commitment to leveraging water for peace and collective well-being.**

8. Predictive AI: Its Use Cases and Benefits

Why in News?

Predictive AI emerges as a transformative force, reshaping how businesses analyse data, make decisions, and stay ahead in their respective industries.

What is Predictive AI?

- Predictive artificial intelligence (AI) refers to the use of machine learning to identify patterns in past events and make predictions about future events.
- **Unlike conventional AI**, which predominantly focuses on analysing historical information, **Predictive AI operates on a visionary principle**: the ability to foresee and forecast future events.
- At its essence, this cutting-edge technology **harnesses the power of advanced algorithms and machine learning models** to scrutinise vast datasets, identifying intricate patterns, correlations and trends that might elude human perception.
- **The key distinction lies in Predictive AI's capacity to go beyond mere data analysis.** It transforms data into a predictive asset, enabling organisations to -
 - Anticipate outcomes,
 - Anticipate market shifts, and
 - Make strategic decisions with unprecedented foresight.
- By learning from historical data and adapting to emerging patterns, Predictive AI becomes a **strategic ally**, guiding businesses through the complex terrain of uncertainty.

How does Predictive AI Work?

- **Big data**: In statistics more data generally results in more accurate analysis. Similarly, predictive AI requires access to vast quantities of data/ "big data".
- **Machine learning (ML)**: ML is a subset of AI and a method for training a computer program to identify data without human intervention.
 - In predictive AI, ML is applied to the vast data collections described earlier.
 - A predictive AI model can process huge data sets without human supervision.
- **Identifying patterns**: Predictive AI learns to associate certain types of data or certain occurrences.
 - Predictive AI can look at hundreds or thousands of factors to identify patterns - which indicate events that can recur in the future.

Predictive AI vs. Generative AI:

- Predictive and generative AI **both use machine learning**, combined with access to lots of data, in order to produce their outputs.
- However, **predictive AI uses machine learning to extrapolate the future.** Generative AI uses machine learning to create content.
- **For example**, a predictive-AI model tells fishermen when a storm is coming. The generative-AI model writes a novel that imagines various interactions between weather and fishing voyages.
- In a sense, generative AI is **similar** to predictive AI, as it **uses statistical analysis to "predict" which words and concepts belong together.**
- **But the goals** for generative and predictive AI are different, the machine learning models they use are different, and the use cases are different.

Some Use Cases of Predictive AI:

- **Analysing the impact of an extreme weather event:**

- A volcano in Iceland erupted (recently) for the 4th time since December, spewing smoke and molten lava into the air.
- A 2010 eruption in Iceland had halted around 100,000 flights in Europe as ash clouds and haze enveloped the skies around the Arctic Circle.
- **Will it impact air travel this time?** That's where data analysis for pattern searches using predictive AI comes in.
- **Moscow-based Yandex** has developed an interactive map that allows the real-time monitoring of ash clouds after eruptions.
- **Oil and gas exploration:**
 - For instance, an oil drilling company with wells around the world has the historical geological data on the regions where all oil drilling has led to successful finds.
 - A predictive AI system trained on this historical data could predict where a new oil well could be located.
 - Earlier this month, **Saudi Aramco**, the world's largest oil producer, showcased its **metabrain generative AI**.
 - Metabrain is helping Aramco to analyse drilling plans and geological data as well as historical drilling times versus costs and provide precise forecasts.
- **Medicine research:**
 - The models of predictive AI could be used in drug discovery, which happens to be one of the most promising areas of research currently.
 - For this reason, the pharmaceutical industry is increasingly seeking to collaborate by pooling data.
 - A recent initiative to facilitate, the '**MELLODDY Project**', involves the EU Innovative Medicines Initiative and around ten pharmaceutical companies.

9. The Problem of Equity in IPCC Reports

In a study published on March 4, researchers analyzed more than 500 future emissions scenarios the UN Intergovernmental Panel on Climate Change (IPCC) assessed in its latest reports.

These scenarios relate to mitigation actions like reducing carbon dioxide emissions from burning fossil fuels and increasing carbon sequestration through forestry.

It found that across all 556 scenarios, **income, energy-use, and emissions disparities** between developed and developing countries are projected to continue up to 2050.

Intergovernmental Panel on Climate Change (IPCC):

- The Intergovernmental Panel on Climate Change is a United Nations body for assessing the science related to climate change.
- It was created in **1988** by the **World Meteorological Organization (WMO)** and the **United Nations Environment Programme (UNEP)**.
- **Objective**– To provide governments, at all levels, with scientific information that they can use to develop climate policies.
- **The IPCC does not conduct its own research.** Thousands of people from all over the world voluntarily contribute to the work of the IPCC.

About IPCC Assessment Reports:

- The IPCC prepares comprehensive **Assessment Reports** about knowledge on climate change, its causes, potential impacts and response options.
- Since its inception in 1988, the IPCC has had **six assessment cycles and delivered six Assessment Reports, the most comprehensive scientific reports about climate change produced worldwide.**
- The **current report, 6th Assessment Report, is divided into three segments i.e. its three Working Groups and a Synthesis Report.**

- The three working group reports have already been published.
- The Synthesis Report was published in March, 2023.
- **The IPCC is currently in its Seventh Assessment cycle (AR7).**

How Does the IPCC Assess Future Scenarios?

- The IPCC uses '**modelled pathways**' to estimate what it will take to limit the warming of the earth's surface.
- These pathways are drawn using **Integrated Assessment Models (IAMs)** that describe human and earth systems.
 - IAMs are complex models that examine possible futures of the energy and climate system and economies.
- **Its macroeconomic models can point to future growth levels in terms of GDP;**
 - its energy models can project future consumption;
 - vegetation models can examine land-use changes; and
 - earth-system models use the laws of physics to understand how climate evolves.
- With such integration across disciplines, **IAMs are meant to provide policy-relevant guidelines on climate action.**
- However, these models also have shortcomings. They prioritise least-cost assessments — for example, the absolute cost of setting up a solar plant or undertaking afforestation in India is lower than in the U.S.
- However, experts have said they could exercise the option of enabling countries to equitably share the burden of action, where the richest undertake more drastic mitigation action more immediately.

About the Latest Study:

- **A study was conducted by a group of experts from Bengaluru and Chennai. They assessed 556 scenarios in IPCC's AR6 report.**
- They found that per-capita GDP across Sub-Saharan Africa, South Asia, West Asia and the rest of Asia will be below the global average even in 2050.
 - These regions together constitute 60% of the world's population.
- They spotted similar **inequities between the Global North and the Global South** vis-à-vis the consumption of goods and services and both energy and fossil fuel consumption.

Importance of Equity:

- The principles of equity and common but differentiated responsibilities are enshrined in the **UN Framework Convention on Climate Change (UNFCCC)**.
- Article 3 of the Convention states countries should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.
- Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.
- These principles recognise that while tackling climate change requires global action, richer countries are better placed to shoulder bigger climate action responsibilities than poorer ones.

Conclusion

In the study, the authors conclude that **construction of IPCC scenarios will need to be both equitable and environmentally sound**. This is currently a major gap in the emissions modelling domain. Hence, there is need to move towards model and scenario building techniques where questions of equity and climate justice come to the foreground.

10. India's R&D Funding, Breaking Down the Numbers

Context

- **The recent announcement in India's Interim Budget for 2024-25, allocating a significant corpus of ₹1 lakh crore to bolster the research and innovation ecosystem,** underscores the nation's commitment to advancing scientific endeavours.
- The decision to expand the iconic slogan 'Jai Jawan Jai Kisan' to 'Jai Jawan, Jai Kisan, Jai Vigyan, Jai Anusandhan' **reflects a renewed emphasis** on research and innovation as fundamental pillars of development.
- **The assessment of the current state of India's research and development (R&D) landscape,** examining its funding, output, and the potential impact of recent initiatives on fostering a conducive environment for research and innovation is important.

The Current State of India's R&D Landscape

- **Government Allocation**
 - The Indian government **plays a pivotal role in driving R&D investment,** with a substantial portion of funding allocated to key scientific agencies.
 - Notable recipients of government funding include the Defence Research and Development Organisation (DRDO), the Department of Space, the Indian Council of Agricultural Research (ICAR), and the Department of Atomic Energy.
 - **These agencies receive significant financial support,** reflecting the government's strategic focus on sectors such as defence, space exploration, agriculture, and nuclear energy.
 - The allocation of funds to these sectors is **often guided by national security imperatives, strategic interests, and developmental goals.**
- **Private Sector Contribution**
 - While the government remains a major contributor to R&D funding, **private sector involvement in India's research ecosystem lags behind global standards.**
 - Compared to leading innovative economies where business enterprises typically contribute over 65% of R&D funding, **Indian businesses represent only 37% of the country's GERD.**
 - The relatively low contribution from the private sector can be attributed to various factors, including risk aversion, limited focus on long-term research, and a preference for incremental innovation over disruptive technologies.
 - **Additionally, regulatory hurdles, lack of access to venture capital, and challenges in commercialising research outcomes** deter private sector investment in R&D.
- **Higher Education Institutions (HEIs) and Public Sector Industry**
 - HEIs and public sector industries **also play a significant role in India's R&D landscape, albeit to a lesser extent** compared to the government and the private sector.
 - **HEIs contribute a modest percentage of R&D funding,** highlighting the need for greater investment in research infrastructure and academic-industry collaboration.
 - Public sector industries, while contributing a smaller share of R&D funding, play a vital role in driving research and technology development in sectors such as energy, telecommunications, and infrastructure.
 - **Collaborative efforts between the public sector industry, HEIs, and the government are essential** to maximise the impact of R&D on economic growth and technological advancement.

Research Output and Innovation in India

- **Academic Talent Production**
 - **India ranks third globally in annual PhD production,** reflecting the nation's commitment to nurturing intellectual capital and fostering a culture of academic excellence.
 - The impressive number of PhDs produced annually underscores India's capacity to contribute significantly to global research endeavours across various disciplines.
 - **The emphasis on doctoral education and research training within Indian universities and research institutions has led to the emergence of a talented pool** of researchers capable of driving innovation and scientific discovery.

- **Publication Output**
 - **India ranks third globally in terms of research publication output**, with over 300,000 publications in 2022.
 - **This substantial volume of research output highlights the nation's robust research ecosystem, diversified research interests**, and contributions to advancing knowledge across diverse fields.
 - **The proliferation of research publications signifies India's active participation in the global scientific community** and its role in shaping scholarly discourse and scientific advancements.
- **Patent Grants and Intellectual Property**
 - **India demonstrates commendable performance in securing patent grants**, ranking sixth globally with over 30,000 patents granted in 2022.
 - While this figure is lower compared to leading innovators like the United States and China, it underscores India's evolving innovation landscape and its potential for further growth in intellectual property creation.
 - **The issuance of patents reflects India's capacity for innovation, technological development, and commercialisation of research outcomes.**
 - It also highlights the nation's efforts to protect intellectual property rights and foster an environment conducive to innovation-driven entrepreneurship.
- **Sectoral Focus and Emerging Technologies**
 - **India's research output spans a wide range of sectors**, including healthcare, agriculture, information technology, renewable energy, and biotechnology.
 - The nation's diverse research interests reflect its strategic priorities, developmental goals, and aspirations for inclusive growth.
 - **Emerging technologies such as artificial intelligence, biotechnology, nanotechnology, and clean energy represent areas of significant focus** and investment within India's research and innovation ecosystem.
 - These technologies hold the potential to drive transformative change, address societal challenges, and enhance India's global competitiveness.
- **Collaboration and International Partnerships**
 - Collaboration between Indian researchers, institutions, and their international counterparts is crucial for fostering innovation, knowledge exchange, and scientific collaboration.
 - **Partnerships with leading global institutions and participation in international research initiatives contribute to India's integration into the global scientific community.**
 - International collaborations facilitate access to cutting-edge technologies, expertise, and research infrastructure, enriching India's research landscape and enhancing its capacity for innovation-driven growth.

Impact of Recent Initiatives

- Recent initiatives, such as the National Deep Tech Startup Policy (NDTSP) and the Anusandhan National Research Foundation (ANRF) Act, **signal a strong commitment to fostering research and innovation.**
- **The NDTSP aims to incentivise private sector engagement in R&D, while the ANRF Act seeks to bridge the R&D investment gap** and nurture a robust research culture within HEIs.
- **These initiatives, coupled with the allocation in the interim Budget, are poised to drive India's research and innovation agenda forward**, particularly in burgeoning industries.

Conclusion

- While significant strides have been made, **there is a need for increased funding, stronger industry-academia collaboration, and policy measures to incentivise private sector involvement.**
- Recent initiatives such as the NDTSP and the ANRF Act represent positive steps towards realizing India's potential as a powerhouse of research and innovation.
- By creating a conducive environment for research and innovation, **India can pave the way for sustainable development and prosperity in the years to come.**

11. Boosting Exports from MSMEs in India

Why in News?

Recently, the Niti Aayog has released a report on boosting exports from Micro, Small and Medium Enterprises (MSMEs).

According to the report, the government must make it easier for smaller firms to export their goods through e-commerce platforms, establish a single national trade portal for all approvals.

MSMEs in India:

Revised Definition of Micro, Small and Medium Enterprises			
Parameters	Micro	Small	Medium
Investment in Plant and Machinery	< 1 Crore INR	< 10 Crore INR	< 50 Crore INR
Annual Turnover	< 5 Crore INR	< 50 Crore INR	< 250 Crore INR
No. of MSMEs (Based on NSS data)	6.3 Crore	3.3 Lakh	5 thousand
No. of MSMEs (Based on Udyam data as on 31st March 2023)	1.5 Crore	4.6 Lakh	41 thousand

- MSMEs are often called the **powerhouse of the Indian economy** as they contribute significantly to employment generation, exports, and overall economic growth.
- They reportedly account for **more than 11 crore jobs and contribute around 27.0% of India's GDP**.
- The sector consists of **around 6.4 crore MSMEs**, with 1.5 crore of them registered on the Udyam portal and employs around 23.0% of the Indian labour force, making it the **2nd-largest employer in India after agriculture**.
- They account for 38.4% of the total manufacturing output and **contribute 45.03% of the country's total exports**.

Exports from MSMEs in India:

- Exports represent **an enormous and under-utilised opportunity** for the MSME sector. Sectors where Indian MSMEs can participate and compete in export markets include -
 - Handicrafts, handloom textiles, ayurveda and herbal supplements, leather goods, imitation jewellery and wooden products.
- Globally, these sectors constitute substantial markets exceeding USD 340 billion, whereas their **domestic market is considerably smaller**.
- Over time, small firms have encountered difficulties in tapping into export markets due to the **inherent obstacles posed by economies of scale**.
- It proves more challenging for small enterprises to -
 - Enter foreign markets,
 - Adhere to compliance requirements,
 - Achieve cost-effective production, and
 - Efficiently manage logistics for clients.

NITI Aayog Recommendations to Boost MSME Exports from India:

- Create One Stop Information Channel for Exporters:**
 - India has several portals that help exporters access information, most of which offer incomplete or outdated information.
 - Therefore, creating a one stop information data intelligence portal using **AI based interface** will be essential to impart information to MSMEs.

- **Create National Trade Network (NTN) as Comprehensive Trade Portal:**
 - Currently an exporter needs to navigate multiple portals to get necessary approvals. This includes the documentation for licences, etc.
 - This difficulty can be eliminated by **creating an end-to-end NTN** which will provide seamless experience to exporters including answering queries and resolution of any gaps in paperwork.
- **Promote E-commerce Exports:**
 - While **China** exported \$200 billion worth of goods through e-commerce in 2022, India exported only \$2 billion.
 - **A key reason for this gap** is the cumbersome compliance process associated with exports, especially when it comes to payment reconciliation, which is particularly challenging for new or small exporters.
 - To boost e-commerce exports, it is essential to create distinction between **Exporter on Record (EOR) and Seller on Record (SOR)**, exempt import duties on rejects/ returns, etc.
- **Promote Ease of Merchandise Exports:**
 - While the government has placed high emphasis on improving Ease of Doing Business, it should be extended to export processes, particularly targeted at MSME exporters.
 - **For example**, MSMEs can be offered relaxation from certain compliance requirements for a period and forgiven on errors as they begin to learn requirements of export markets.
- **Improve Access to Export Finance:** Access to finance is regularly seen as a key bottleneck for MSMEs. Towards this end, promotion of **Export Credit Guarantee** can help improve working capital availability for MSMEs.
- **Ensure Accurate Measurement:**
 - Currently, a dependable single data source for MSME exports is lacking.
 - Establishing a reliable depiction of MSME exports involves **integrating DGFT trade data with GST and income tax data**.
 - This fusion of datasets, utilising PAN numbers as the common identifier, will provide an accurate portrayal of MSME exports.

12. Central Transfers: Arresting the Decline in Shares of Some States

Context

- The Sixteenth Finance Commission faces numerous challenges, with an **important issue raised by several southern states in India regarding the decline in their share of resources** transferred from the Centre.
- **The issue (or the complaint) is that these States have been facing a decline in their share** out of the resources transferred from the Centre to the States, from Finance Commission to Finance Commission.
- Therefore, **it becomes crucial to understand factors contributing to this decline, focusing on the income distance criterion, changes in population data, and the divisible pool.**

Analysis of the Decline in Shares

- **A Steady Decline in Share of Southern States**
 - **The Twelfth Finance Commission marked the beginning of a trend where southern states saw their share decline** from 19.785% to 15.800% by the Fifteenth Finance Commission.
 - This steady decrease has **raised concerns among state governments and policymakers about the fairness and equity of resource distribution**, prompting a closer look at the criteria influencing these allocations.
- **Decline in Share Due to Horizontal Distribution Criteria**
 - A comparative analysis of the shares of different groups of states reveals a pattern where **northern and eastern states, along with the southern states, have experienced a decline in their share.**
 - On the other hand, **hilly, central, and western states, including Maharashtra, have emerged as 'gainer'**
 - This trend suggests that **the horizontal distribution criteria have not favoured certain regions consistently**, leading to a redistribution of resources among states.

Criteria of Share Distribution and Related Controversies

• The Distance Criterion: A Crucial Role in Resource Allocation

- The role of the distance criterion in tax devolution is a pivotal aspect shaping the distribution of resources among states, as determined by Finance Commissions in India.
- This criterion, assigned the highest weight in the allocation process, **operates on the principle that the farther a state is from the highest income state, the higher its share in the resources transferred from the Centre.**
- The shares of individual States in tax devolution depend on the criteria and the weights used by different Commissions.
- **The distance criterion has been accorded the highest weight amongst these criteria.**
- **Its weight was reduced from 50% to 47.5% by the Thirteenth Finance Commission and further reduced to 45% by the Fifteenth Finance Commission** the Eleventh Finance Commission had given this criterion a weight of 62.5%.

• Impact on Southern States Due to The Distance Criterion

- The **primary impact of the distance criterion is seen in the case of southern states in India**, where a steady decline in their share of resources can be attributed to this specific parameter.
- The mechanism implies that states with a greater income disparity from the highest income state face a higher allocation, while those with a smaller disparity experience a reduced share.
- **In the context of southern states, this has resulted in a notable decrease in their resource allocation from the Twelfth to the Fifteenth Finance Commission**, raising concerns among state governments.
- Between these two Finance Commissions, the loss to the southern States due to the distance criterion amounted to 8.055% points, **although the overall loss was much less at 3.985% points, implying that there was a gain under other criteria.**
- Although **on account of the distance criterion, low-income States such as Bihar and Uttar Pradesh have gained over time**, they have lost on account of other criteria.

• Population Data and Demographic Criterion

- One other criterion that has caused some controversy is population. **Until the Fourteenth Finance Commission, the data for the population in 1971 was used. For the Fifteenth Finance Commission, data for the population in 2011 was used.**
- However, in order not to penalise States that showed better performance in reducing fertility rates, **the demographic change criterion was introduced.**
- **The joint impact of these two changes has been marginal for all groups of States and for Tamil Nadu, the joint impact was marginally positive.**

Steps to Address Concerns and Controversies Related to Distribution Share

• Reducing the Weight of the Distance Criterion

- One proposed step to address the concerns is to **strategically reduce the weight assigned to the income distance criterion.**
- Currently set at 45%, a **reduction by 5% to 10% points could help mitigate the disproportionate impact** on states with closer income proximity to the highest income state.
- This **adjustment aims to strike a balance between recognising income disparities and preventing significant losses for states** within specific geographical distances.

• Enhancing Weights of Other Criteria

- To counterbalance the reduction in the weight of the distance criterion, **the Sixteenth Finance Commission could consider enhancing the weights assigned to other criteria.**
- Criteria such as population, area, and demographic changes may warrant increased emphasis to ensure a more comprehensive and nuanced approach to resource allocation.

• Addressing Cesses and Surcharges

- Another critical aspect to **consider is the impact of cesses and surcharges on the divisible pool.**
- The Fourteenth Finance Commission recommended raising the share of all states to 42%, but subsequent increases in cesses and surcharges have diminished the size of the divisible pool.
- **Setting an upper limit, perhaps restricting cesses, and surcharges to 10% of the Centre's gross tax revenues, could prevent further reductions** in the size of the pool and safeguard the interests of the states.
- **Reevaluating the Divisible Pool Size**
 - The **overall quantum of the divisible pool plays a pivotal role** in determining states' shares.
 - While the Fourteenth Finance Commission's recommendation to raise the states' share to 42% was accepted, **subsequent fluctuations in the divisible pool size due to changes in cesses and surcharges have impacted states' actual receipts.**
 - **A revaluation of the divisible pool size, considering economic trends and fiscal responsibilities, may be necessary to ensure states receive their allocated shares** without undue reductions.
- **Periodic Review Mechanism**
 - **Instituting a periodic review mechanism** within Finance Commissions **could enhance flexibility and responsiveness** to changing economic dynamics.
 - A more frequent review, perhaps midway through the term, would allow for timely adjustments to criteria weights based on emerging trends and evolving state needs.
- **Transparent Consultation Process**
 - **Ensuring a transparent and consultative process is essential** for addressing concerns and garnering stakeholder feedback.
 - The Sixteenth Finance Commission could actively engage with state governments, experts, and other stakeholders during its deliberations.
 - **It will create a collaborative approach to finding solutions and ensuring that the allocation process reflects the diverse needs** and priorities of different states.

Conclusion

- The concerns raised by southern states regarding their declining shares **necessitate a nuanced approach by the Sixteenth Finance Commission.**
- **Balancing the importance of the income distance criterion with other criteria and addressing the size of the divisible pool through limiting cesses and surcharges are crucial steps** towards ensuring fair resource distribution among states in India.

13. The Biggest Roadblock to India's Net-Zero Goal

Context

- With global efforts to decarbonise and an increasing demand for critical minerals, governments throughout the world are taking strategic steps to ensure access to these essential resources.
- **The government of India has also made amendments to mining laws to facilitate private sector participation** in the extraction and processing of the critical minerals.

Significant Measures Taken by the Indian Government

- **Identification of Critical Minerals**
 - **In July 2023, India took the pivotal step of identifying a list of 30 critical minerals, distinct from rare earths.**
 - **Each chosen based on criteria such as disruption potential, substitutability, cross-cutting usage, import reliance, and recycling rates.**
 - The identified minerals are **geographically concentrated in states and union territories, including Bihar, Gujarat, Jharkhand, Odisha, Tamil Nadu, Uttar Pradesh, Chhattisgarh, and Jammu and Kashmir.**
- **Amendment of Existing Mining Laws**

- **A subsequent move in November 2023 involved the amendment of existing mining laws** to enable private sector involvement in the auction of 20 blocks containing critical minerals and rare earths.
- **This marks a significant shift in India's mineral sector**, opening opportunities for private enterprises to contribute to the extraction and processing of these crucial resources.

Significance of Critical Minerals

- **Decarbonisation and Clean Energy Technologies**

- While decarbonisation efforts are a primary driver for the identification of critical minerals, their **crucial role in clean energy technologies cannot be overstated**.
- **Solar PV plants, wind farms, and electric vehicles**, integral components of clean energy transitions, **heavily rely on critical minerals for their production**.
- **The International Energy Agency (IEA) estimates that over 40% of copper and rare earths, 60-70% of nickel, and cobalt, and 90% of lithium demand will be driven by clean energy technologies** to meet Paris Agreement targets.

- **Transportation Sector**

- The shift towards electric vehicles (EVs) is a key component of sustainable transportation.
- **Critical minerals, especially lithium, cobalt, and nickel, are essential components** in the manufacturing of batteries for EVs.
- **The demand for these minerals is expected to surge** as countries worldwide transition from traditional internal combustion engine vehicles to electric alternatives.

- **Consumer Electronics**

- Critical minerals **play a crucial role in the production of consumer electronics**, including smartphones, laptops, and tablets.
- The **miniaturization and enhanced performance of electronic devices are made possible using specific rare earth elements** and other critical minerals in their components.

- **Construction Industry**

- The **construction industry relies on critical minerals for various applications**, including the production of high-strength alloys, cement, and other building materials.
- These **minerals contribute to the durability and efficiency of construction materials**, ensuring the sustainability of infrastructure projects.

- **Defence and National Security**

- **Critical minerals are indispensable in the defence sector to produce advanced weaponry**, communication systems, and other military technologies.
- Ensuring a stable and secure supply of these minerals is **crucial for maintaining national security and technological superiority**.

- **Fertilisers and Agriculture**

- Certain critical minerals, **such as phosphorus and potassium, are essential components in fertilisers** used in agriculture.
- They play a vital role in enhancing crop yields and ensuring global food security.

- **Magnets for Industries**

- **The manufacturing of magnets**, widely used in various industries, **relies on critical minerals like neodymium, praseodymium, and dysprosium**.
- These **magnets are integral components in technologies** ranging from electric motors to medical devices.

The Geographical Concentration of Critical Minerals and Its Global Implications

- **Economic Dynamics**

- **The concentration of critical mineral resources in a few countries**, such as Australia, China, the Democratic Republic of Congo (DRC), Indonesia, and Chile, **creates economic dependencies**.

- Nations possessing substantial reserves hold a significant advantage in terms of revenue generation, job creation, and overall economic development, **potentially leading to global economic imbalances.**
- **Geopolitical Power Play**
 - The strategic importance of critical minerals transforms their extraction and processing into geopolitical tools. Nations controlling these resources gain influence on the global stage.
 - **China, in particular, has utilised its dominance in rare earths to exert political leverage,** as seen in restrictions on exports to countries like the US and Japan.
 - **China's dominant position** in critical minerals, coupled with its monopolised processing capacity, **has geopolitical implications.**
 - The nation has used its rare earths monopoly as a tool for political leverage, **restricting exports and related technologies.**
 - **This has prompted the formation of international collaborations, such as the US-led Minerals Security Partnership (MSP),** aiming to secure the critical minerals supply chain and reduce dependence on authoritarian states.
- **Supply Chain Vulnerability**
 - The concentration of critical mineral resources in specific regions **raises concerns about the vulnerability of global supply chains.**
 - **Political unrest, trade disputes, or other geopolitical events in major producing nations can disrupt the supply of critical minerals,** impacting industries dependent on them.

India's Goals and Challenges in Securing Critical Minerals

- **Decarbonisation Goals and Energy Transition**
 - India has set **ambitious targets for decarbonisation, aiming to become net-zero by 2070 and establish 500 GW of non-fossil fuel power generation capacity by 2030.**
 - The transition to renewable energy sources, electric vehicles, and sustainable practices underscores India's commitment to mitigating climate change.
- **Heavy Dependence on Imports**
 - Despite possessing identified reserves of critical minerals, **India currently relies heavily on imports to meet its demand for these resources.**
 - **The import dependency poses a significant challenge,** exposing the nation to global market fluctuations, supply chain disruptions, and potential geopolitical tensions.
- **Strategic Agreements for Exploration**
 - Recognising the need to reduce import reliance, India has entered into strategic agreements, **such as the one with Australia, to jointly explore for critical minerals like lithium and cobalt.**
 - **Collaborations with resource-rich nations aim to secure access to raw materials** and diversify sources beyond traditional suppliers.
- **Lack of Domestic Processing Capacity**
 - Identifying critical minerals is just the first step; the subsequent processing and manufacturing of final products necessitate advanced technology and infrastructure.
 - **India faces a challenge in building domestic processing capacity,** which contributes to a prolonged gestation period before achieving self-reliance.
 - Besides raw material availability, **gaining access to advanced technology for mineral processing and manufacturing remains a critical aspect.**
 - Technology transfer and collaborative ventures with countries possessing processing expertise become vital for India's success in this domain.
- **Participation in International Collaborations**
 - **India's involvement in the US-led MSP demonstrates its commitment to building strategic collaborations** for securing the critical minerals supply chain.

- **The MSP includes countries with deposits of critical minerals**, as well as those with access to processing technology, fostering a collective effort to overcome challenges.

Conclusion

- There is a growing concern that the **lack of access to critical minerals may emerge as a significant roadblock to India's ambitious march towards decarbonisation**.
- **The success of decarbonisation goals is contingent on overcoming challenges** related to import dependency, processing capacity, and technological advancements.

14. Mountains of Plastic Are Choking the Himalayan States

Context

- **Plastic pollution has become an alarming global issue**, transcending geographical boundaries, and infiltrating even the remotest corners of the planet.
- **The Indian Himalayan Region, known for its pristine landscapes and vital water sources, is not immune to this crisis.**
- Therefore, it becomes imperative to **explore the extent of plastic pollution in the Indian Himalayan Region**, its impact on the environment, and the inadequacies in current waste management systems.

An Analysis of Presence of Plastic in the Indian Himalayan Region and Its Implications

- **Microplastics in the Himalayas: A Silent Menace to Pristine Glacial Ecosystems**
 - **The minute particles known as microplastics**, a byproduct of larger plastic degradation, are **silently infiltrating the Himalayan mountains**.
 - Lying within glacial deposits, **these microplastics pose a significant threat as they are released into rivers during the melting season**.
 - This **not only contaminates crucial water sources but also jeopardises downstream communities**, showing the interconnected impact of plastic pollution on the region's pristine glacial ecosystems.
- **Plastic Invasion on Water Sources: Threatening Subcontinent's Lifelines**
 - **The Indian Himalayan Region**, renowned for its role as a vital water source, is **facing a severe plastic invasion**.
 - **Major river systems** like the Indus, Ganges, and Brahmaputra are **contaminated by unscientific plastic disposal**, leading to soil and water pollution.
 - The **repercussions extend beyond environmental damage**, impacting the region's rich biodiversity.
 - **The toxic components of plastic** leaching into the ecosystem **disrupt the delicate balance**, posing a threat to terrestrial and aquatic species alike.
- **Urbanisation, Tourism, and Plastic Crisis: A Looming Environmental Catastrophe**
 - **Rapid and unplanned urbanisation, coupled with changing production and consumption patterns**, contributes significantly to the mounting plastic waste crisis in the Indian Himalayan Region.
 - **The surge in tourist footfalls exacerbates the issue**, turning once-pristine landscapes into dumping grounds for non-biodegradable materials.
 - **The recent report by the SDC Foundation Dehradun underscores the urgency for intervention**, shedding light on towns in Uttarakhand drowning in plastic waste due to unregulated disposal practices.
- **Beyond Visual Pollution: Environmental Impact and Biodiversity Loss**
 - Plastic pollution **poses a direct threat to the region's rich biodiversity** as it infiltrates the diverse ecosystems.
 - **The accumulation of plastic waste in rivers and lakes alters water quality**, creating a toxic environment that aquatic organisms struggle to endure.
 - **From fish to amphibians, the entire aquatic food chain is jeopardised**, affecting not only the survival of these species but also the livelihoods of communities dependent on them for sustenance.

- On land, the impact is equally profound, as **plastic waste litters the landscape, it disrupts the habitats of various flora and fauna.**
- The physical presence of plastic items **can obstruct natural pathways for wildlife**, leading to displacement and potential conflict between animals and human settlements.

Challenges in the Battle Against Plastic Pollution in the Indian Himalayan Region (IHR)

- **Legal Challenges and Eco-sensitive Areas: The National Green Tribunal's Intervention**
 - The National Green Tribunal's **issuance of notices to various authorities reveals the legal challenges** in waste dumping in eco-sensitive areas.
 - **Tourists and commercial establishments** often contribute to this problem, **prompting legal scrutiny.**
 - **The quantum jump in tourist footfalls strains the region's already fragile waste management systems.**
 - This legal intervention highlights the need for a comprehensive approach to regulate waste disposal practices to preserve the fragile ecosystem of the IHR.
- **Beyond Recyclability: The Microplastic Predicament Unveiled by Himalayan Clean-up Initiatives**
 - Himalayan Clean-up initiatives conducted by organisations like Integrated Mountain Initiative and the **National Productivity Council reveals alarming statistics.**
 - The high percentage of non-recyclable plastic waste in the region poses a unique challenge.
 - **The waste audit results emphasise the pressing need for effective waste management strategies** that go beyond mere recycling, considering the peculiarities of the Himalayan region's waste composition.

An Analysis of Contradiction between Regulatory Expectations and Actual Practices

- **Plastic Overshoot Day 2023**
 - The concept of Plastic Overshoot Day, when plastic waste surpasses waste management capabilities, serves as a stark reality check.
 - **Despite claims of systemic ability to handle plastic waste, India reached its Plastic Overshoot Day in 2023 on January 6.**
 - The discrepancies between waste management capabilities and the mismanaged waste index **raise questions about the effectiveness of current waste management systems**, demanding urgent attention and reform.
- **National Regulatory Framework**
 - The Solid Waste Management Rules (SWM) 2016, Plastic Waste Management (PWM) Rules 2016, and Extended Producer Responsibility (EPR) 2022 **collectively constitute the regulatory backbone for managing plastic waste in India.**
 - However, **their application in the Himalayan context has its challenges.**
 - **While the SWM recognises the special needs of hill areas, the PWM and EPR often overlook these unique requirements** when creating mandates for both local bodies and producers, importers, and brand owners (PIBOs).
 - **The lack of customisation to the distinct characteristics of the Himalayan region hinders the efficacy of these regulations.**
- **Local Initiatives and Legislative Measures**
 - **States across the IHR have taken commendable steps** to address the plastic menace. Himachal Pradesh, for instance, implemented a buy-back policy for non-recyclable and single-use plastic waste in 2019.
 - **While these initiatives demonstrate a regional commitment to tackling the plastic problem, the tangible results are yet to be fully realised.**
 - Because legislative measures have not prevented widespread littering of plastic waste, emphasising the gap between policy and on-the-ground implementation.
 - For example, the collective mandate of SWM/PWM/EPR emphasises waste segregation at source as a prerequisite for effective waste management. **However, the ground reality reveals a stark contrast.**

Way Forward

- **Plugging Data Gaps**

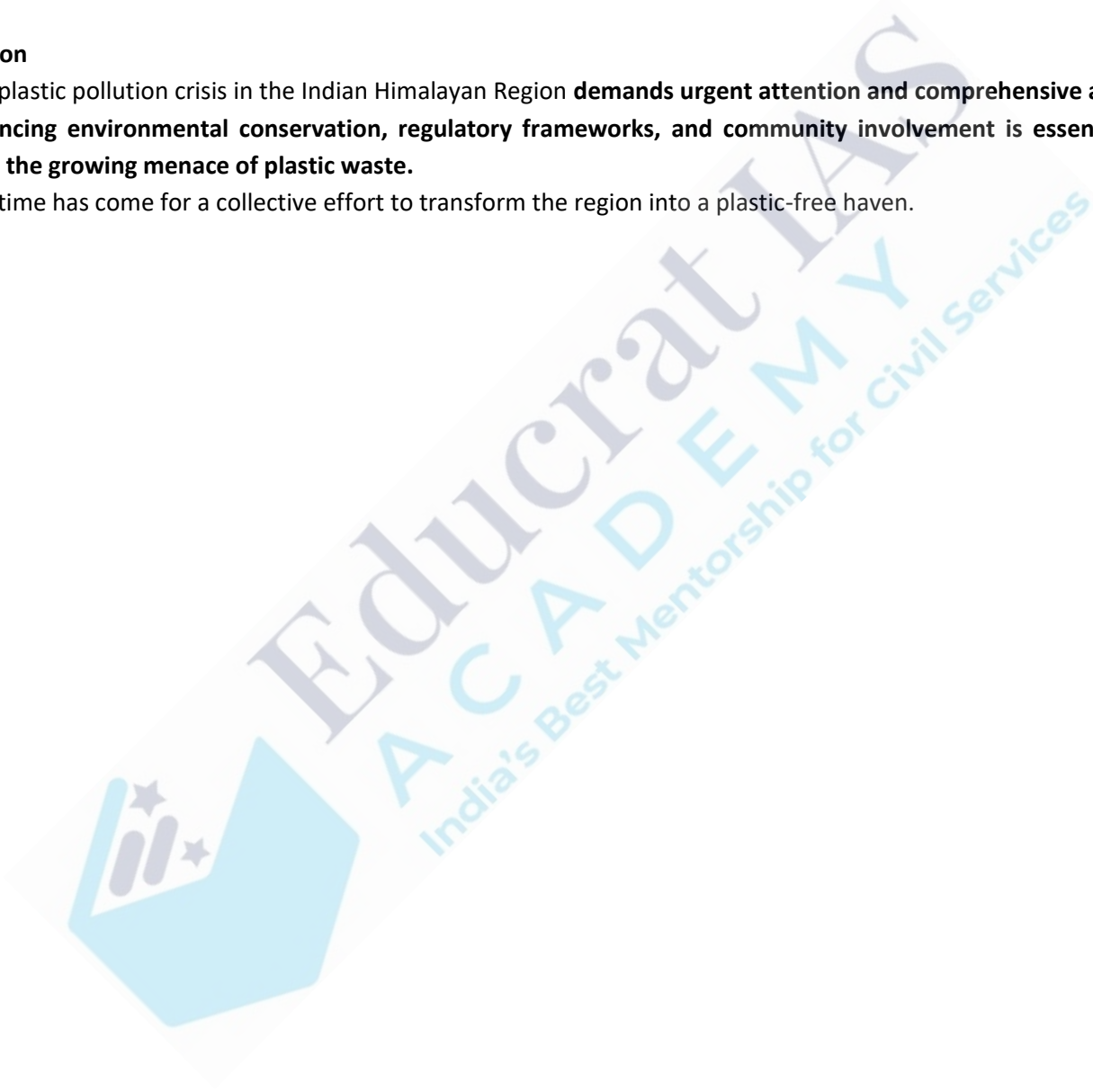
- The first step towards effective waste management in the IHR is to **address the prevailing data gaps**.
- **Understanding the quantum and quality of waste generated in the states within the region is essential** for crafting tailored solutions.

- **Resource Allocation Considerations**

- **Appropriate resource allocation is crucial** for managing the plastic pollution crisis in the IHR.
- This allocation should be considerate of the rich biodiversity, ecological sensitivity, and the unique challenges posed by the mountainous terrain.
- **Traditional waste management approaches may not suffice**, necessitating innovative solutions tailored to the topographical constraints of the mountains.

Conclusion

- The plastic pollution crisis in the Indian Himalayan Region **demands urgent attention and comprehensive action**.
- **Balancing environmental conservation, regulatory frameworks, and community involvement is essential to curb the growing menace of plastic waste**.
- The time has come for a collective effort to transform the region into a plastic-free haven.



PRELIMS BOOSTER- THE HINDU & INDIAN EXPRESS

1ST MARCH

1. Roen olmi:

- It is a **mushroom** of the **Termitomyces species**.
- It grows on **termite hills** and is locally known as 'roen olmi' in Goa.
- It is an **edible wild mushroom** popular among Goans and consumed during the monsoons.
- These mushrooms have no independent existence. They **grow only in association with termites**.
- **Habitat:** It is endemic to the **Western Ghats**, where the thick forest cover and high humidity provide an ideal breeding ground.
- **Ecological significance:** It plays a very important role as a powerful **biodegrading fungus** in forest and grassland ecosystems converting 50% of dead plant material on the ground into rich soil.
- In fact, all **Termitomyces species are edible** and have unique food value attributed to their texture, flavour, nutrient content, and beneficial **mediational properties**.
- Additionally, Termito-myces have been recognized for their **ethno-medicinal importance** in various indigenous communities throughout Asia and Africa.
- Termitomyces species possess various beneficial antioxidant and antimicrobial properties

2. Law Commission in India:

- The Law Commission of India is a **non-statutory body constituted by the Union government**.
- It is a commission established to ensure that the laws formed are just and fair which work towards its proper implementation.
- It can be referred to as an ad hoc body, which is constituted for the fulfilment of a particular purpose.
 - Basically, it works as an **advisory body to the Ministry of Law and Justice**.
- However, it is not defined under the Indian Constitution. **It is constituted as part of Article 39A**.
 - **Article 39A** guarantees that no citizen is deprived of the opportunity to get justice due to a lack of resources or other impediments.

3. General Agreement on Trade in Services (GATS)

- It was created to extend the multilateral **trading system to the service sector**, in the same way, the General Agreement on Tariffs and Trade (GATT) provides such a system for merchandise trade.
- It was **signed at the Uruguay Round** of Multilateral Trade Negotiations' conclusion and entered into force on January 1, 1995.
- **Members:** All WTO members are at the same time members of the GATS including India.
- Basic obligations under the GATS may be categorized into **two broad groups**:
 - **General obligations** that apply to all members and services sector.
 - **Specific commitments:** These are obligations that apply only to the sectors **inscribed in a member's schedule of commitments**. Such commitments are laid down in individual schedules whose scope may vary widely between members.
 - The GATS applies in principle to all service sectors, with two exceptions.
 - **Services supplied in the exercise of governmental authority:** These are services that are **supplied neither on a commercial basis** nor in competition with other suppliers.
 - These include **social security schemes** and any other public service, such as health or education that is provided at non-market conditions.
 - **The Annex on Air Transport Services** exempts from coverage measures affecting air traffic rights and services directly related to the exercise of such rights.

New obligations

- The new obligations under their schedules in GATS seek to mitigate the unintended trade-restrictive effects of measures related to **licensing requirements and procedures**, qualification requirements and procedures and technical standards among themselves.
- The disciplines will be applied on a "**most-favoured nation**" principle, meaning that they will benefit all WTO members.
- These disciplines have been named **Services Domestic Regulation (DSR)** and **came into force in the 13th Ministerial Conference of the WTO**.

4TH MARCH

1. Plaintiff:

- A **plaint** is a **legal document** that **contains the claims made by the plaintiff** when they bring a case to a civil court. (A **plaintiff is a person who brings a civil action in a court** of law).
- It serves as the **initial step in starting a lawsuit**.
- In fact, in the very **plaint**, the **contents of the civil suit are laid out**.
- Through such a **plaint**, the **grievances** of the plaintiff are **spelled out**, as well as the **possible causes of action** that can arise out of the suit.
- A **plaint** which is presented to a civil court of appropriate jurisdiction **contains everything, including facts to relief that the plaintiff expects to obtain**.
- **Order VII** of the Code of Civil Procedure (CPC) particularly deals with a **plaint**.
- A few of the essentials of a **plaint** implicit in itself are **those only material facts, and not all facts or the law** as such is to be stated, the **facts should be concise and precise, and no evidence should be mentioned**.
- Particulars of a **Plaint** (Rules 1 to 8 of Order VII of the CPC):
 - The **name of the civil or commercial court** where the lawsuit will be filed.
 - **Information about the plaintiff**, including their name, address, and description.
 - **Details about the defendant**, including their name, residence and description.
 - If the plaintiff has **any health issues or disabilities**, these should be mentioned.
 - The **facts that give rise to the cause of action** and where this cause of action occurred.
 - Facts that help determine the court's jurisdiction.
 - Information about the **relief or remedy the plaintiff is seeking** from the court.
 - If the plaintiff wants to set off a portion of their claim, the amount allowed should be stated.
 - The **value of the subject matter** of the suit, not just for jurisdiction but also for court fees.
 - **Verification by the plaintiff under oath**.

2. Foreign Exchange Reserve:

- Foreign Exchange Reserves (also called **Forex Reserves**) are **reserve assets held by a central bank in foreign currencies**.
- Foreign assets comprise assets that are **not denominated in the domestic currency** of the country.
- These may **include foreign currencies, bonds, treasury bills**, and other government securities.
- Reserves are **denominated and expressed in the US dollar**, which is the international numeraire for the purpose.
- **RBI is the custodian** of the foreign exchange reserves in India.
- India's foreign exchange reserves comprise of:
 - **Foreign currency assets (FCAs)**: These are maintained in currencies like the US dollar, euro, pound sterling, Australian dollar, and Japanese yen.
 - **Gold**
 - **SDR (Special Drawing Rights)**: This is the reserve currency with the IMF.
 - **RTP (Reserve Tranche Position)**: This is the reserve capital with the IMF.
- The **biggest contributor to India's Forex reserves is foreign currency assets**, followed by gold.
- Purpose:
 - They are used to **back liabilities on their own issued currency, support the exchange rate, and set monetary policy**.
 - To **ensure that RBI has backup funds** if their national currency rapidly devalues or becomes altogether insolvent.
 - **If the value of the Rupee decreases** due to an increase in the demand for the foreign currency, then **RBI sells the dollar in the Indian money market** so that depreciation of the Indian currency can be checked.
 - A country with a good stock of forex has a **good image at the international level** because the trading countries can be sure about their payments.
 - A good forex reserve **helps in attracting foreign trade** and earns a good reputation with trading partners.

3. Nano Urea:

- It is a **nanotechnology-based** revolutionary Agri-input that provides nitrogen to plants.
- It is developed and **patented by the Indian Farmers Fertiliser Cooperative Limited (IFFCO)**.

- IFFCO Nano Urea is the **only nano fertilizer approved by the Government of India** and **included in the Fertilizer Control Order (FCO)**.
- Features:
 - Compared to conventional urea prill, Nano Urea has a **desirable particle size** of about 20-50 nm, and **more surface area** (10,000 times over 1 mm urea prill), **and number of particles** (55,000 nitrogen particles over 1 mm urea prill).
 - It contains 4.0 % total nitrogen (w/v).
- **Benefits:**
 - It is produced by an **energy-efficient, environment-friendly production process** with **less carbon footprints**.
 - **Increased availability to crops by more than 80%**, resulting in higher nutrient use efficiency.
 - It is expected to **improve crop productivity, soil health, and nutritional quality** of produce and address the "imbalanced and excessive use" of conventional fertilizer.

5 MARCH

1. Semiconductor fabrication

1. About: Semiconductor device fabrication is the **intricate process used to create integrated circuits (ICs) which are the building blocks of modern electronic devices**.

2. The fabrication process is the toughest part in manufacturing semiconductors, as it requires clean rooms to maintain sterile conditions and prevent contamination by air particles.

3. It's a very lengthy process to manufacture the final product of a semiconductor, which includes around 500 and 1,500 steps in the overall manufacturing process of semiconductor wafers.

4. This process also conducts various inputs like silicon wafers, commodity chemicals, speciality chemicals along with clean water supply and uninterrupted power supply.

5. Technology used in semiconductor fabrication: In semiconductor fabrication, various technologies come together to transform raw silicon wafers into intricate integrated circuits (ICs).

a. Wafer Preparation: **The process starts with a wafer, which is typically made of pure single-crystal semiconducting material (usually silicon).** The wafer undergoes several steps, including thermal oxidation and thin-film deposition, gradually forming electronic circuits.

b. Photolithography: This step involves masking and exposing the wafer to light. This creates intricate patterns on its surface which define the locations of transistors, capacitors, and other components.

c. Ion Implantation: In the process of Ion Implantation, high-energy ions are precisely implanted into the wafer to alter its electrical properties. This step helps create doped regions necessary for transistor operation.

d. Etching: In this process, unwanted material is selectively removed from the wafer using chemical etchants. This process shapes the various components.

e. Thin-Film Deposition: Thin layers of materials (such as silicon dioxide or metal) are deposited onto the wafer which serve as insulators, conductors, or gate oxides.

f. Annealing and Activation: In this process, **the wafer is heated to activate dopants and repair any damage caused during previous steps.** The wafer's surface is polished to achieve a flat and smooth finish.

h. Die Singulation: The wafer contains multiple integrated circuits, known as dies. In this process, these dies are separated from the wafer in a process called die singulation or wafer dicing.

2. Lahore Resolution:

- It was adopted by the **All-India Muslim League** during its general session in Lahore from **March 22 to March 24, 1940**, formally called for an independent state for India's Muslims.
- The resolution does not include the word 'Pakistan' anywhere.
- **The Lahore Resolution was criticised by many Indian Muslims, like Abul Kalam Azad and the Deoband ulema led by Husain Ahmad Madani, who advocated for a united India.**

What did the Resolution say?

- Geographically contiguous units are demarcated into regions which should be so constituted, with such territorial readjustments as may be necessary, that the areas in which the **Muslims are numerically in a majority** as in the North-Western and Eastern Zones of India, **should be grouped to constitute "Independent States"** in which the constituent units shall be autonomous and sovereign."
- In other parts of India where the Mussalmans

are in a minority, adequate, effective and mandatory safeguards shall be specially provided in the constitution for them and other minorities for the protection of their religious, cultural, economic, political, administrative and other rights and interests in consultation with them.”

What was the lead-up to the Lahore Resolution?

- Till the early 1930s, many Muslims had been agitating for better representation and safeguarding of their rights within the Indian Union, and the separate electorate granted to them in the **Government of India Act, 1935**, was a step towards that.
- The Muslim League session was held days after the **Khaksar tragedy**, when members of a Muslim group called the **Khaksars, fighting for India's independence, were shot at by the British on March 19 in Lahore**, killing many.

3. Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954:

- It is a legislative framework to **control the advertisement of drugs and prohibit** claims of magical qualities in remedies.
- It encompasses various forms of **advertisements, including written, oral, and visual mediums**.
- Under the Act, the term **“drug”** refers to medicines intended for human or animal use, substances for diagnosis or treatment of diseases, and articles affecting the body's functions.
- Other than articles meant for consumption, the definition for **“magic remedy”** under this Act also extends to **talismans, mantras, and charms** that allegedly possess miraculous powers for healing or influencing bodily functions.
- It prohibits advertisements that give **false impressions**, make **false claims**, or are otherwise misleading.
- The term **“advertisement,”** under the Act, extends to all notices, labels, wrappers, and oral announcements.

Who comes under the Magic Remedies Act?

- The Act applies to all **individuals and entities** involved in the publication of advertisements, **including manufacturers, distributors, and advertisers**.
- If a company violates the act, individuals in

charge of its business operations may also be deemed guilty unless they can prove lack of knowledge or demonstrate due diligence in preventing the offense.

- Directors, managers, or officers of the company may also be held liable if they consented to or neglected the offense.

• Punishment

- Violating the Act can result in **imprisonment, fines, or both**.
- If this is the first conviction for the violator, they may face up to six months in prison, fines or both.
- For subsequent conviction, imprisonment may extend to one year, fine, or both.
- The Act does not include any limits for the fines that may be imposed on individuals or organisations

6 MARCH

1. Cavum clouds:

- These clouds are also known as **“hole-punch clouds or fallstreak holes.”**
- How are Cavum clouds formed?
 - These are formed when aeroplanes pass through layers of **altocumulus clouds**, which are mid-level clouds containing **supercooled water droplets** (water below freezing temperature but still in liquid form).
 - As the aircraft moves through, a process **known as adiabatic expansion** can cause the water droplets to freeze into ice crystals.
 - These ice crystals eventually become too **heavy and fall out of the cloud layer**, creating a hole in the clouds.
 - They are formed when planes pass through at a relatively steep angle.

What are Altocumulus clouds?

- These are typically found in groups or **heaps clumped together**.
- They're found in the middle layer of the troposphere, lower than cirrocumulus and higher than their cumulus and stratocumulus counterparts.
- The term mackerel sky is also common to altocumulus (and cirrocumulus) clouds that display a pattern resembling fish scales.

2. Types of Bail in India:

- The CrPC does not define the word bail.
 - The **Code of Criminal Procedure (CrPC)** was **first drafted in 1882** and continues to be in use with amendments from time to time.
- Depending upon the stage of the criminal matter, there are commonly three types of bail in India:
 - **Regular Bail:**
 - A regular bail is generally granted to a person who has been arrested or is in police custody.
 - A bail application can be filed for the regular bail under **section 437 and 439 of CrPC.**
 - **Interim Bail:**
 - This **type of bail is granted for a short period of time and it is granted before the hearing for the grant of regular bail or anticipatory bail.**
 - **Anticipatory Bail:**
 - Anticipatory bail is granted under **section 438 of CrPC** either by session court or High Court.
 - An application for the **grant of anticipatory bail can be filed by the person who discerns that he may be arrested by the police for a non-bailable offence.**

3. National Commission for Protection of Child Rights:

- It has been constituted by the Government of India, under the **Commission for Protection of Child Rights (CPCR) Act, 2005.**
- **Mandate:** The **Commission is mandated under section 13 of the CPCR Act, 2005** "to ensure that all Laws, Policies, Programmes, and Administrative Mechanisms are in consonance with the Child Rights perspective as enshrined in the Constitution of India and the UN Convention on the Rights of the Child."
- It is also mandated to monitor the proper and effective implementation of **Protection of Children from Sexual Offences (POCSO) Act, 2012; Juvenile Justice (Care and Protection of Children) Act, 2015** and **Right to Free and Compulsory Education (RTE) Act, 2009.**

Composition

- **A chairperson** who, is a person of eminence and has done outstanding work for promoting the welfare of children
- **Six members**, out of which at least **two are woman**, from the following fields, is appointed by the Central Government from amongst person of eminence, ability, integrity, standing and experience in Education, Child health, care, welfare or child development; Juvenile justice or care of neglected or marginalized children or children with disabilities, Elimination of child labour or children in distress, Child psychology or sociology; and Laws relating to children.
- These members are appointed by the Central Government for a term of 3 years.
Nodal Ministry: It works under the Ministry of Women and Child Development

7 MARCH

1. Section 319 of the CrPC:

- It confers **power on the Court to proceed against persons**, other than those named as accused in the chargesheet, appearing to be guilty of offence.
- Section 319 CrPC finds its roots in this powerful doctrine, "**Judex damnatur cum nocens absolvitor**", which means **the judge is condemned when the guilty is acquitted.**
- It conveys the significant principle that a **wrongdoer must not be spared from the hands of justice.**

Essentials of Section 319 CrPC:

- **Additional Accused Persons:** Section 319 empowers the court to summon and try other persons, in addition to those already named as accused in the case, if it appears that they have also committed the offence being tried.
- **Evidence During Trial:** The court can exercise this power either on its own or based on an application by the prosecution or the defense.
- **Sufficient Evidence:** The court must have sufficient evidence against the additional accused persons to justify summoning them for trial.
- **Opportunity to be Heard:** Before summoning any additional accused, the court should provide them with an opportunity to be heard.
- **Joined in the Same Trial:** The additional accused

will be tried along with the original accused. There will be a **separate trial if court finds it necessary**.

- **Protection of Rights:** The rights and safeguards available to the original accused, also extend to the additional accused.
- **Discretion of the Court:** The decision to summon additional accused persons rests on the discretion of the court. However, the Supreme Court held that
 - It **should be employed sparingly** and when the situation clearly calls for it.
 - **Only when there is clear and convincing evidence** against a person in the evidence provided to the court should this power be used, and not arbitrarily or carelessly.

2. Dying Declaration:

- A Dying Declaration is a **statement made by a person who is dead**. It is dealt with under clause (1) of Section 32 of the **Indian Evidence Act 1872**.
- Generally, it relates to the cause of death of the declarant. It is **admissible as evidence in all proceedings**, civil or criminal.
- The reason behind this can be followed by the **Latin maxim 'Nemo Mariturus Presumuntur Mentri'** which means that "Man Will Not Meet His Maker with Lying on His Mouth."

Format

- There is **no specific format** required for a dying declaration. It can be **given orally, in writing, through gestures** or signs, by a thumb impression, or even in the form of a question and answer.
- However, the statement must clearly and assertively convey the person's intention. Ideally, a written declaration should be **recorded using the exact words stated by the person** making the statement.
- **In cases where a magistrate records** the dying declaration, it is usually done in a question- and- answer format. This allows the magistrate to gather maximum relevant information accurately.

Who can record a Dying Declaration?

- The best form of declaration of dying would be

the **one recorded by the Magistrate**.

- However, according to the Supreme Court's guidelines, **anyone can record the dying statement**.
- A dying statement can also be recorded by public servants or by a doctor as well, where the victim is hospitalized.

Evidentiary Value:

- A dying declaration carries significant weight in legal proceedings and **can serve as the sole basis for a conviction** without the need for additional corroborating evidence.
- However, the court must ensure that the statement of the deceased **was not influenced, coached**, or a result of imagination.
- It must also **ascertain that the deceased was of sound mind** and had a clear opportunity to observe and identify the assailants.
 - If the person making the dying statement is likely to live, his statement is inadmissible as a dying statement.

3. Fourier's Law:

- Fourier's law, or **Law of Heat Conduction**, describes how heat is transferred, or conducted, through solid materials.
- As molecules vibrate and electrons shuttle about, the **heat diffuses from the hotter end** of an object **to the colder end**.
- It states that the **rate of heat conduction** through a plane layer is proportional to the temperature gradient across the layer and the heat transfer area of the layer.
- Basically, it is an empirical relation between the rate of heat conduction, heat transfer, and temperature gradient in the direction of heat flow.
- **Formula: $q = -kAT$** , where,
 - **q is the heat flux**, which is expressed as energy per unit area per unit time.
 - **k is the heat conductivity coefficient (thermal conductivity)**. The dimension is area per unit time, so typical units for expressing it would be m²/s.
 - ∇T is the temperature gradient (K/m)
- The **thermal conductivity** of the material (k) is also known as the proportionality constant that is obtained in the formula. A high value of k

denotes that the material is a good thermal conductor, and easily transfers energy through it.

What is Conduction?

- Conduction is the **process by which heat energy is transmitted through collisions between neighboring atoms** or molecules.
- Conduction **occurs more readily in solids and liquids**, where the particles are closer together, than in gases, where particles are further apart.
- **Anything that involves direct physical contact** to transfer heat is an example of conduction.

8 MARCH

1. Great Lakes:

- North America's Great Lakes have recorded significantly below average ice cover for the second consecutive year in a row.
- **Great Lakes** — Superior, Michigan, Huron, Erie and Ontario — form the largest fresh surface water system on Earth.
- **Except for Lake Michigan**, the lakes provide a natural border between Canada and United States.
- Water in the Great Lakes flows from **Lake Superior, via Lake Huron, Lake Michigan, Lake Erie, into Lake Ontario**, and into the Atlantic Ocean through the Saint Lawrence River.

2. Interoperable Net banking Payments:

- The Reserve Bank of India (RBI) has given approval for **implementing an interoperable payment system for internet banking transactions, as envisaged in RBI's Payments Vision 2025.**
- It will be **implemented by NPCI Bharat BillPay Ltd (NBBL)**, a wholly-owned subsidiary of National Payments Corporation of India (NPCI).
- It will facilitate quicker settlement of funds for merchants.
- At present, online merchant payment transactions through internet banking are processed through Payment Aggregators (PAs), which are not interoperable.
- So, a bank is required to separately integrate with each PA of different online merchants.

3. Women, Business and the Law 2024 Report (World Bank):

- The Report measures the laws that affect women's economic opportunity in 190 economies. Report assesses economies across 10 indicators: **Safety, Mobility, Workplace, Pay, Marriage, Parenthood, Childcare, Entrepreneurship, Assets and Pension.**
- **Key findings of the report:** It measures the gap between women's legal rights on paper and reality.
 - Globally, women have just two-thirds of the rights of men in the workplace.
 - **Indian women have just 60% of the legal rights compared to men.** Women earn just 77 cents for every dollar paid to men.
 - Less than 20% economies adopted enforcement mechanisms to address the pay gap. Nearly all economies performed poorly in Safety and Childcare.
 - Women have a third of the legal protection they need from **domestic violence, sexual harassment, child marriage, and femicide.**
 - **Women spend nearly 2.4 hours more a day on unpaid care work than men**, much of it involving childcare.

11 MARCH

1. Biosimilars:

- Recently, Sandoz Received FDA approval for first and only denosumab biosimilars.
- Denosumab can address primary and secondary bone loss, such as osteoporosis.

About Biosimilar:

- It is a **medicine that is very close in structure and function to a biologic medicine (also called the reference product).**
- It has the same treatment risks and benefits as that of biologic medicine.
- **Advantage:** Increased access to lifesaving medications at potentially lower costs.
- Biosimilars are more complex to manufacture than smallmolecule generic medicine

2. Blue Line:

- US envoy to Lebanon emphasised situation along the blue line has to change to guarantee peace

and security.

12 MARCH

About Blue line:

- **Israel and Lebanon have no official border separating them, except the Blue Line.**
- It was set by the United Nations in 2000.
- It is **made of blue barrels and runs from the Mediterranean to the Golan Heights to the east.**
- Its purpose was to confirm the withdrawal of Israeli forces from the south of Lebanon.

Note: Blue Line is also a learning ecosystem created by the UN System Staff College.

2. Pine (Pinus):

- **CSIR-Indian Institute of Petroleum has signed a MoU with Uttarakhand State Council for Science and Technology** to deploy the technology of making fuel from Pine Needles (pointed leaves of a pine tree).
- Technology involves, Briquetting, process of converting biomass residues into a fuel.
- Briquetting uses compaction methods for densification of waste materials and converts them into fuel.

About Pine Tree:

- It is an **evergreen conifer (they produce cones that encase reproduction seeds).**
- Native to northern temperate regions (Can be found throughout the world).
- Shed their older needles in the fall season.

3. Benzene (C₆H₆):

- It has been found that certain cosmetic product contain harmful chemicals like Benzene.

About Benzene:

- It is a **colourless or light yellow liquid at room temperature.**
- It has a **sweet odor and is highly flammable.**
- It is a highly volatile compound and is a natural component of gasoline and tobacco smoke.
- It is soluble in water, and thus can contaminate surface waters and soil.
- **Applications:** Shoemaking, painting, printing and rubber manufacturing.
- Health impacts include headache, tremors, including cancer and haematological effects.

1. NITI for States' Platform:

- Government has **launched the 'NITI for States' platform.**
- It is a comprehensive digital initiative designed to empower States/UTs in their pursuit of national development goals.

Key Features of Platform:

- It offers a centralised repository of valuable resources, including best practices, policy documents, datasets, and NITI Aayog publications.
- **Multilingual:** It will be available in 22 major Indian languages and 7 foreign languages.
- **Capacity Building:** Tailored digital training modules for officials at various levels (block, district, and state).
- **Expert Help:** Specialized guidance through partnerships with leading institutions to address specific challenges.

2. Government measures for coal import substitution

Vision 2030:

- Increase in Coal and lignite production. Auction and operationalisation of more commercial/captive coal blocks.
- Coal Logistic Policy and coal evacuation plan for efficient evacuation of coal.
- Mission Coking coal for production and utilization of domestic coking coal.
- Technology Upgradation with **coal sector digitalization, smart dashboard, remote sensing application etc.**

3. Zero Budget Natural Farming (ZBNF):

- ZBNF is farming with nature without use of modern tools and technology (like machinery, genetically modified seeds, soil testing).
- According to it, **plants obtain 98-98.5% of nutrition from air, water, and sun, and remaining 1.5% from the soil.**
- System, therefore, can sustain and flourish even without nutrient supplementation.

Four wheels of ZBNF (Pioneered by Subhash Palekar) include:

- **Beejamrit** - Microbial coating of seeds

- **Jeevamrit** - Microbial coating of soil
- **Waaphasa** - Soil aeration
- **Acchadana** - Mulching - applying layer of organic material to soil surface

Union Government implements ZBNF as **Bhartiya Prakritik Krishi Padhati (BPKP)**, a sub-scheme of **Paramparagat Krishi Vikas Yojana (PKVY)**.

4. Uttar Poorva Transformative Industrialization Scheme (UNNATI), 2024:

- It is a Central Sector Scheme for the development of industries and generation of employment in the states of the Northeast Region.
- **Objective:** To generate gainful employment, which will lead to the area's overall socio-economic development and productive economic activity in the manufacturing and service sectors.

Key features of the scheme

- **Scheme period:** 10 years along with 8 years of committed liabilities.
- **Eligibility:** All new Industrial units and Expanding units.
- Maximum eligible benefits to one unit from all components: Rs. 250 Cr.
- Green industries like EV charging stations are on the positive list, while cement, plastic, and others are on the negative list.
- Districts are categorized in two zones: **Zone A (Industrially Advanced Districts) & Zone B (Industrially Backward Districts)**
- **Divided into two parts:** Part A, caters to the incentives for the eligible units, and Part B, is for implementation and institutional arrangements for the scheme.
- **Earmarking of funds:** 60% of the outlay of Part A has been earmarked to 8 Northeastern states and 40% on First-In-First-Out basis.
- **Implemented by:** the Department for Promotion of Industry and Internal Trade (DPIIT) in cooperation with the states.

13 MARCH

1. International Narcotics Control Board (INCB):

- **Secretariat:** Vienna, Austria Established in 1968 in accordance with Single Convention on Narcotic Drugs, 1961.

- It is an independent and quasi-judicial monitoring body for implementation of United Nations international drug control conventions.
- It has **13 members**, each elected by Economic and Social Council for a period of five years.
- INCB initiatives to prevent Internet exploitation for drug trafficking: Global Rapid Interdiction of Dangerous Substances (GRIDS) Programme and Project International Operations on New psychoactive substances (ION).

2. Nomination to Rajya Sabha:

- Former chairperson of **Infosys Foundation Sudha Murty was nominated to Rajya Sabha.**
- Rajya Sabha Nomination Under Allocation of Business Rules, 1961, the subject "Nominations to the Rajya Sabha" is allocated to Ministry of Home Affairs.
- Under **Article 80 (3) of Constitution**, 12 members are nominated by President having special knowledge or practical experience in areas like literature, science, art, and social service.
- In **Ram Gopal Singh Sisodia Vs. Union of India through its Secretary & Ors. 2012**, Delhi High Court upheld nomination of Sachin Tendulkar under Article 80(3).

3. Indelible Ink (Voter's Ink):

- **Mysore Paints and Varnish Ltd (MPVL)**, the sole manufacturer of indelible ink, received its largest order yet from Election Commission for 26.55 lakh vials of marker.
- Under rule **49K of Conduct of Elections Rules, 1961** every elector shall allow his left forefinger to be inspected by Presiding officer or Polling Officer and an Indelible ink mark to be put on it.
- Once applied, Purple-coloured ink cannot be removed by any chemical, detergent, soap or oil for several months.
- **Ink contains silver nitrate**, which on reaction with nail and on exposure to light gets darker.

4. Measles and Rubella (MR):

- India has been bestowed with '**Measles and Rubella Champion Award**' by MR Partnership.
- MR Partnership comprises a multi-agency planning committee, including American Red Cross, World Health Organisation (WHO) etc.

- **Measles is a highly contagious virus**, spread by contact with an infected person through coughing and sneezing.
- Rubella (German Measles) is acute, contagious viral infection transmitted by airborne droplets when infected people sneeze or cough.
- Humans are the only known host.
- MR are vaccine preventable diseases.
- **MR Vaccine is part of India's Universal Immunization Programme since 2017**

14 MARCH

1. Insurance Regulatory and Development Authority of India (IRDAI):

- Statutory body formed under **IRDA Act, 1999**.
- **Purpose:** Overall supervision and development of the Insurance sector in India.
- **Key objectives:** Protecting the interest of policyholders, Speedy and orderly growth of the insurance industry, Speedy settlement of genuine claims.
- IRDAI is taking steps like **Bima Sugam, Bima Vahak and Bima Vistaar amongst other to fulfil its vision of 'Insurance for All' by 2047.**

2. European Free Trade Association (EFTA):

- An intergovernmental organization for promotion and intensification of free trade.
- **Present members:** Iceland, Liechtenstein, Norway, and Switzerland. These countries are not part of the European Union (EU).
- Founded by **Stockholm Convention in 1960 with its 7 founding members (Austria, Denmark, Great Britain, Norway, Portugal, Sweden and Switzerland).**

3. Parthenogenesis:

- Scientists have genetically modified a fruit fly to **reproduce asexually through Parthenogenesis**. About Parthenogenesis (PG) It is an asexual reproduction in which a female can produce an embryo without fertilizing an egg with sperm.

Two forms of Natural PG:

- **Automixis:** It, observed mostly in sharks, slightly shuffles mother's DNA to produce children who are close to but not identical clones of mother.
- **Apomixis:** A type of genetic copy-and-paste where offspring generated are genetically

identical clones of their parents. Plants are more prone to this type of parthenogenesis.

4. Golden Langur:

- According to latest survey, there are around 7,396 Golden langurs in India.

About Golden langur Protection Status:

◆ **IUCN:** Endangered

◆ **CITES:** Appendix I

◆ **Wildlife Protection Act:** Schedule-I Characteristics:

- Belong to a large group of Old World monkeys called the colobines (leaf-eating primates having a ruminant-like multi-chambered stomach).
- Coat colour varies seasonally becoming **cream colored in summer and dark golden in winter**.
- They are diurnal and arboreal in nature and live in troops (3-15).
- Habitat: Endemic to subtropical and temperate broadleaf forests in Assam (Brahmaputra River Valley) and Bhutan.

18 MARCH

1. Agnipath Scheme: The **Passing Out Parade of the third batch of Agniveers** who are recruited under Agnipath scheme for serving in the Armed forces was held recently.

About scheme Background:

- **Launched in 2022.**
- **Ministry:** Ministry of Defence
- **Aim:** To bring paradigm changes in the Human Resource Management of the Indian Army.
- **Agniveers:** 17.5-year-old to 21-year-old youth selected to serve in the Armed Forces for 4 years.
- **Selection for regular cadre:** The best among Agniveers, up to 25% in each batch, will be selected to serve for another 15 years.
- **'Seva Nidhi' package:** To be paid to Agniveers on completion of the engagement period of four years.

2. Lyme Disease: A case of Lyme disease was reported in Ernakulam district (Kerala)

About Disease

- **Pathogen:** Bacteria *Borrelia burgdorferi*, and *Borrelia mayonii*
- **Infects humans by:** Bite of deer ticks (or black-legged ticks).
- **Symptoms:** Fever, headache, multiple areas of

rash (called erythema migrans), heart block, numbness or recurring episodes of arthritis.

- **Treatment:** Doxycycline or amoxicillin antibiotics
- **Regions affected:** Mainly USA, Europe and some parts of Asia.

3. Geoheritage Sites (GHS):

- Geological Survey of India (GSI) emphasises **preserving GHS at Pandavula Gutta in Jayashankar Bhupalpally District (Telangana).**
- Older than the Himalayan hills, Pandavula Gutta features prehistoric rock paintings in Green, red, yellow and white pigments.
- Paintings have **swastika symbols**, circles and squares, and animals like **Bison, Antelope, Tiger, Leopard**
- GHS, sites of rare geological and geomorphologic significance, are declared by GSI.
- **India is a party to the UNESCO Convention** concerning the Protection of the World Cultural and Natural Heritage.
- Across the world, the parties to this convention protect GHS through relevant legislation.

4. PB – SHABD Initiative: Ministry of Information and Broadcasting launched PB-SHABD (PrasarBharti - Shared Audio Visuals for Broadcast and Dissemination) Initiative.

About PB-SHABD:

- **A news service launched by Prasar Bharati to support the daily news needs of the Indian media industry.**
- It will be offering its services of cost for the first year as an introductory offer and will provide news stories in all major Indian languages across fifty categories.
- SHABD leverages on the expansive reporter network of **Akashvani and Doordarshan to produce its news.**
- **Prasar Bharati is India's public broadcaster, which has Doordarshan and Akashvani operating under its aegis.**

19 MARCH

1. Voyager 1:

- NASA found clue while solving Voyager 1's

communication breakdown case, which was sending back incoherent data.

About Voyager 1

- Launched in **1977 to flyby Jupiter and Saturn**, it crossed into interstellar space in 2012.
- It was the first **spacecraft to cross heliosphere**, the boundary where the influences outside our solar system are stronger than those from our Sun.
- It discovered a thin ring around Jupiter and two new Jovian moons: Thebe and Metis.
- **At Saturn, it found five new moons and a new ring called G-ring**

2. Kisan Credit Card (KCC) Fisheries scheme:

- Department of Fisheries successfully inaugurates the **integration of the Kisan Credit Card Fisheries scheme with the JanSamarth Portal.**
- JanSamarth is a first-of-its-kind online platform for directly connecting lenders with beneficiaries.
- Citizens can avail loans under certain Central government schemes. In the year 2018-19, KCC facility has been extended to fishers and fish farmers to meet their working capital requirement.
- It covers Farmers either individual or joint borrower, Joint Liability Groups or Self Help Group etc.
- Under it, farmer get interest Subvention of 2% annually and in case Prompt Repayment subvention will be 3%.

3. Ethanol 100:

- **A cleaner and greener alternative to gasoline.** It is a blend of 92 to 94 percent ethanol, 4 to 5 percent motor spirit to provide colour to flame and 1.5 percent Co-solvent higher saturated alcohol. Significance:
- It produces lower emissions of greenhouse gases, a reduction by around 63% on well to wheel basis.
- Its high-octane rating makes it suitable for high performance engines, ensuring enhanced efficiency and power output.
- **Significant reductions in foreign exchange savings.**

20 MARCH

1. Indian Elephant (*Elephas maximus*):

- Subspecies of Asian elephants native to Indian subcontinent.
- **Habitat:** Dry-thorn forests, moist and dry deciduous forests, tropical evergreen and semi-evergreen forests.
- As per Elephant Census 2017, **Karnataka has highest number of elephants followed by Assam.**

Characteristics:

- Leader of an elephant group: Female.
- Maximum gestation period: 22 months.

Conservation status:

- **IUCN status:** Endangered
- **CITES status:** Appendix I
- **WPA, 1972 Schedule I**

2. Dwarf Coconut Variety (Kalpa Suvarna) and Hybrid varieties of cocoa (VTL CH I and VTL CH II):

- Government released a new Kalpa Suvarna and VTL CH I and VTL CH II developed by Central Plantation Crops Research Institute.

About Kalpa Suvarna

- Suitable for copra and tender coconut production.
- It starts **flowering 30-36 months after planting.**
- Recommended for cultivation in Karnataka and Kerala.

About VTL CH I and VTL CH II VTL CH I:

- Cultivated as **an inter-crop both in arecanut coconut plantations** and suitable for Karnataka, Kerala, Tamil Nadu and Andhra Pradesh.
- **VTL CH II:** Tolerant to black pod rot which is in high rainfall region and suitable for Karnataka and Kerala.

3. Biomining:

- Delhi's Biomining project is likely to miss the 2024 deadline to clear landfill sites.

About Biomining:

- As per **Central Pollution Control Board, scientific process of excavation, treatment, segregation and gainful utilisation of aged municipal solid waste or legacy waste is called**

Biomining.

- It is an **environmentally friendly technique to separate soil and recyclables** like plastic, metal, paper, textiles, etc.
- Biomining operations target valuable metals like copper, uranium, nickel, and gold that are commonly found in sulfur-bearing minerals.

21 MARCH

1. Patents:

- A **statutory right granted by the respective governments.**
- It gives the exclusive rights and bars others from making, using, selling and importing product or process, based on the patented invention without prior permission.
- **Time period:** 20 years
- **Criteria for patent:-** Should be novel, must involve an inventive step, capable of industrial production etc.
- **India has ratified Patent Cooperation Treaty (PCT).**

2. Air Quality Report 2023:

- Air Quality Report 2023 is released by Swiss organisation IQ Air.
- **India had the third worst air quality after Bangladesh and Pakistan.**
- **New Delhi has been ranked as the World's most Polluted Capital City.**
- **Bihar's Begusarai** has emerged as the world's most polluted metropolitan area.
- More than 1 billion people in India experience PM2.5 concentrations exceeding the WHO's recommended levels of 5 µg/m³.
- Only Seven countries met the WHO annual PM 2.5 guideline.
- **French Polynesia is identified as least polluted.**

3. Tobacco Board:

- Tobacco Board authorizes 100 million kg crop size for Karnataka during 2024-25.

About Tobacco Board (HQ: Guntur, Andhra Pradesh)

- It is **statutory body constituted in 1976 under Tobacco Board Act, 1975.**
- **Function:** Export promotion of all varieties of tobacco and its allied products, and production, distribution, and regulation of Flue

Cured Virginia tobacco.

- **Ministry:** Dept. Of Commerce, Ministry of Commerce & Industry.
- In 2021, **India stood as 2nd largest country in production and 4th largest exporter of unmanufactured tobacco in world.**

4. Third-Party Application Provider (TPAP):

- **Paytm has recently received third-party application provider license from National Payments Corporation of India.**

About TPAP:

- It is an entity that provides UPI-compliant apps e.g., Mobile wallets and merchant apps to end-user customers to facilitate UPI-based payment transactions.
- **TPAP participates in UPI through a Payment Service Provider (PSP) bank.**
- PSP is a banking platform. It connects to UPI platform to offer UPI payment services to itself and TPAPs.
- **Unified Payments Interface (UPI) is a real-time payment system developed by NPCI.**

22 MARCH

1. Negative Interest Rates (NIR):

- Bank of Japan ends negative interest rates, which was introduced in Japan in 2016.

About NIR

- It is an **unconventional monetary policy tool where central banks set target interest rates less than zero percent.**
- **Aims to address deflationary pressure and recession in the economy** by incentivizing consumers and businesses to spend or invest money, rather than leave it in their bank accounts.
- **Other unconventional monetary policy instruments:** Extended lending or Term-Funding Operations, Asset Purchase Programmes, etc.

2. Peatlands: A new study finds that drainage canals for peatlands are a major source of carbon emissions.

About Peatlands:

- **Peatlands are terrestrial wetland ecosystems**

with waterlogged conditions which slow down the decay process which prevents plant material from fully decomposing.

- Generally, found in **permafrost regions towards poles and at high altitudes**, in coastal areas, beneath tropical rainforest and in boreal forests.
- These are some of the largest stores of carbon in the world.

3. Asbestos: USA's Environmental Protection Agency banned all forms of deadly carcinogen asbestos.

- Asbestos is a group of naturally occurring fibrous minerals having extraordinary tensile strength, poor heat conduction and resistance to chemical.
- Main forms of asbestos are **chrysotile (white asbestos) and crocidolite (blue asbestos).**
- **Applications:** Building materials, insulation, automobile parts etc.
- **Health impact:** All types of asbestos are carcinogenic, causing lung cancer, mesothelioma, cancer of larynx and ovary, and asbestosis (fibrosis of the lungs).
- India has not banned use of any type of asbestos

4. Seaweed: Indonesia is pioneering large-scale cultivation projects in **East Lombok, with support and collaboration from India.**

About Seaweed:

- It is a **common name for species of marine plants and algae** that grow in the ocean as well as in rivers, lakes, and other water bodies.
 - Most are medium-sized and come in colours of red, green, brown, and black.
 - **Properties:** Low in calories due to its high content of fibre and water, but rich in minerals absorbed from seawater, and not a major source of protein.
- Potential Benefits:** Weight control, prebiotic food source for beneficial gut bacteria, antioxidant, etc.

26 MARCH

1. United Nation General Assembly (UNGA):

- Established in **1945 under Charter of United Nations**, it occupies central position as chief deliberative, policymaking and representative organ of UN.

- **Comprised of all 193 Members of UN.** It can grant observer status to non-member States.
- Inter-governmental organisations can seek observer status in UNGA.
- Permanent Observers may participate in sessions and workings of General Assembly and maintain missions at UN Headquarters.

2. Global Environment Facility (GEF) HQ: Washington, D.C (US)

- **Genesis:** Established during 1992 Rio Earth Summit.

About:

- **GEF is a unique partnership of 18 agencies** — including UN agencies, multilateral development banks, national entities and international NGOs working with member countries to address the world's most challenging environmental issues.
- **Role:** Serves as financial mechanism for five international environmental conventions: Minamata Convention on Mercury, Stockholm Convention on POPs, UN Convention on Biological Diversity (UNCBD), UN Convention to Combat Desertification (UNCCD) and UN Framework Convention on Climate Change (UNFCCC)
- **GEF Trustee:** World Bank
- **Member countries:** More than 180 countries (including India)

3. Postal Ballots:

- Election Commission has notified Postal ballots for essential services workers.
- Postal ballots or vote by post allow eligible voters to exercise their franchise when they are unable to cast their votes in person.
- Eligible voters for Postal ballots are Service voters (member of armed forces, Armed Police Force of a State, government employees, etc.) Absentee voters (senior citizens, person with disability, etc.) Electors on election duty or under preventive detention.
- Paper used in Postal Ballot is different from the one used in the EVM.

4. Shiva and Shakti: Building blocks of Milky Way

- European Space Agency's astrometry satellite Gaia have discovered the earliest building blocks of Milky Way, named them Shiva and Shakti.
- Shiva and Shakti appear to be the remnants of

two galaxies that merged between 12 and 13 billion years ago to form Milky way.

- Shakti stars orbit a little further from Milky Way's centre and in more circular orbits than Shiva stars. By studying these, **scientists can gain insights into Milky Way's formation process.**

27 MARCH

1. Shanghai Cooperation Organisation (SCO) Startup Forum:

- 4th edition of the SCO Startup Forum was organized in New Delhi.
- The **initiative focused on broadening Startup interactions among the SCO Member States, Fostering an environment conducive to innovation,** Promoting job creation, and inspiring young talent to develop innovative solutions.
- The creation of a Special Working Group for Startups and Innovation (SWG) at the Summit of SCO Heads of State in Samarkand (Uzbekistan), in September 2022, was a key step in the development of the SCO Startup Forum.
- The SWG is permanently chaired by India.
- It is created with the vision of promoting collaboration among SCO Member States and accelerating regional economic development.

2. Bima Sugam: Insurance Regulatory and Development Authority of India (IRDAI) approved the setting up of Bima Sugam.

About Bima Sugam:

- It is formed under **Section 8 of Companies Act, 2013 as a not for-profit company.**
- It is an **insurance e-market with open standards** and an interoperable platform.
- **Act as a one-stop solution for all Insurance stakeholders** vis-a-vis customers, insurers, intermediaries, or insurance intermediaries.
- Available free of cost to consumers.
- Enables insurance companies to validate and authenticate data from multiple touchpoints in real time.
- It aims to achieve the vision of "Insurance for all by 2047".

3. Black Panther: A black panther was recently spotted in Munnar (Kerala).

About Black Panther:

- **Black panthers are not a distinct species**, but 'melanistic' members of the genus Panthera (lions, tigers, leopards, jaguars and snow leopards).
- Genetic mutation is the cause of such melanin.
- In practice, the term black panther only really applies to leopards and jaguars, as fully black individuals don't occur in the other species.
- **IUCN red list:** ♦ Panthera pardus (vulnerable) ♦ Panthera onca (Not threatened)

4. Sher Singh Shah (1912-1991):

About Sher Singh Shah:

- He was a freedom fighter born in Rudraprayag district of Uttarakhand.
- His father's name is Padam Singh Shah, and his mother's name is Devki Devi.
Contribution:
- He **secretly spreading awareness about the freedom struggle**.
- He took an oath in the Lalita Mai temple in Nala, declaring that he would serve his country for his entire life.
- He led Quit India movement (1942) from Kedar Ghati (Uttarakhand)
- He fought against the British regime at Kasaragod and Barmwadi
- **Awards:** Government of India honoured him with a Copper Plate in 1972

28 MARCH

1. Hepatitis B: Public knowledge about Hepatitis B is dismal in India, according to study.

- Viral hepatitis is an inflammation of liver caused by a virus.
- **Main hepatitis viruses are:**
 - **Hepatitis A:** Effective vaccine available; Outbreaks related to contaminated food or to person-to-person transmission.
 - **Hepatitis B:** Effective vaccine available; is a leading cause of liver cancer.
 - **Hepatitis C:** It is spread when a person who is not immune comes in contact with body fluids from an infected person. There's no vaccine to prevent it.

2. PSLV Orbital Experimental Module-3 (POEM-3):

POEM-3, successfully concluded its mission by re-entering Earth's atmosphere and disintegrating.

- **Achievement:** It virtually left no debris in orbit, demonstrating a commitment to minimizing spaceclutter.
- **About POEM-3:** It used spent PS4 stage of the PSLV-C58 rocket that launched XPoSat.
- POEM initiative utilizes fourth stage of PSLV as **platform to conduct scientific experiments in orbit** converting it into a functioning laboratory for space-based research.

3. Mekong River: Vietnam faces crop losses as saltwater seeps into the Mekong Delta region, known as "Vietnam's rice bowl".

- The **Mekong delta, one of the largest and most fertile deltas in Asia**, is situated in Cambodia and Vietnam.
- Mekong River is longest river in Southeast Asia.
- **Origin:** Tibetan Plateau. It passes through China, Myanmar, Thailand, Laos, Cambodia and Vietnam.
- It forms part of international border between Myanmar and Laos, and Laos and Thailand.
- It drains into South China Sea.
- Cities on its banks include **Phnom Penh, Ho Chi Minh City and Vientiane**.

4. Bahá'í Community: The faith of Bahá'í community is not recognised by the Iran's Constitution.

- Bahá'í faith is a relatively young monotheistic religion with spiritual roots dating back to early 19th century in Iran.
- Founder of **Bahá'í faith is Bahá'u'lláh**.
- Holy shrine of Bahá'u'lláh and Holy shrine of the Báb (Haifa), as the most holy places of the Bahá'í faith, are located in Israel.
- Bahai core beliefs are **"the unity of religion", "the unity of God", and "the unity of humanity"**.
- **New Delhi's Lotus Temple is a Bahá'í House of Worship**.

29 MARCH

1. Ex-parte Injunctions and SLAPP suits:

- Supreme Court has highlighted the **problem of affluent getting pre-trial injunctions from courts against the media and civil society**, restricting free speech and public's right to information.
- According to bench, an injunction, particularly ex-parte (without hearing all parties to a case), should not be granted without establishing that the content sought to be restricted is 'malicious' or 'palpably false'.

- Court also urged trial courts to take note of trend of Strategic Litigation against Public Participation (SLAPP) suits whereby entities with vast economic resources use litigation to prevent public from knowing about their operations involving public interest

2. Machine-to-Machine Communications:

- Telecom Regulatory Authority of India (TRAI) released recommendations on 'Usage of Embedded SIM for Machine-to Machine Communications (M2M)'.
- M2M communications refer to automated applications which involve machines or devices communicating through a network without human intervention.
- Sensors and communication modules are embedded within M2M devices. These enable data transfer from one device to another through wired and wireless communications networks.
- **Applications:** Robotics and conveyor belts in factories, Smart Grid and Smart Water systems, jet engines, bus fleets, home appliances, and more.

3. Luna Structure:

- A study has confirmed that **Luna Structure in low-lying Banni plains of the Gujarat's Kutch region is**

an impact crater.

- It is a 1.8 kilometre wide crater which was formed when a massive object primarily made of iron struck the planet.
- Luna region was one amongst the several settlements linked to the ancient Harappan Civilization.
- Other impact craters in India include **Dhala in Madhya Pradesh, Lonar in Maharashtra, and Ramgarh in Rajasthan.**

4. Domestic Systemically Important Insurers (D-SIIs):

- **Insurance Regulatory and Development Authority of India (IRDAI)** releases 2023-24 – List of D-SIIs.
- Life Insurance Corporation of India (LIC), General Insurance Corporation of India (GIC Re) and New India Assurance Company continue to be identified as D-SIIs.
- D-SIIs refer to insurers of such size, market importance, and domestic and global inter connectedness, whose distress or failure would cause a significant dislocation in the domestic financial system.
- D-SIIs are perceived as 'too big or too important to fail' (TBTF). D-SIIs are subject to additional regulatory measures.



PRESS INFORMATION BUREAU (PIB)

1ST MARCH

1. BioTRIG: It is a new waste management technology based on the pyrolysis system. It works by sealing the waste inside an oxygen-free chamber and heating it above 400 degrees Celsius. Useful chemicals are produced in the process. In the study, the researchers outlined that three products of pyrolysis — bio-oil, syngas and biochar fertiliser — could help rural Indians live healthier and greener lives.

The syngas and bio-oil facilitate heat and power the pyrolysis system in future cycles and surplus electricity is utilized to power local homes and businesses. **The clean-burning bio-oil to replace dirty cooking fuels in homes and using biochar to store carbon, while improving soil fertility.** Computer simulations showed that the BioTRIG system could also be effective in real-world applications. **It could help reduce greenhouse gas emissions from communities by nearly 350 kg of CO₂-eq per capita per annum.** It could help rural Indians cut indoor air pollution, improve soil health, and generate clean power.

2. International Big Cat Alliance: It is an initiative launched by Prime Minister of India in April 2023 in Mysuru commemorating the 50th anniversary of Project Tiger. The objective of the IBCA is to ensure cooperation for the conservation of seven big cats: lion, tiger, leopard, cheetah, snow leopard, jaguar, and puma. Five of these cats, apart from jaguar and puma, are found in India.. It is **open to 97 'range' countries, which contain the natural habitat of these big cats, as well as other interested nations, international organizations, etc.**

It aims for mutual cooperation among countries for mutual benefit in furthering the conservation agenda. It would have a multipronged approach in broad basing and establishing linkages manifold in several areas and help in knowledge sharing, capacity building, networking, advocacy, finance and resources support, research and technical support, education and awareness.

Governance Structure:

- A General Assembly consisting of all member countries.

- A Council of at least seven but not more than 15 member countries elected by the General Assembly for a term of 5 years, and a Secretariat.
- Upon the recommendation of the Council, the **General Assembly will appoint the IBCA Secretary General for a specific term.**
- It has secured Government of India's initial support of Rs. 150 crore for five years (2023-24 to 2027-28).

3. Vikramaditya Vedic Clock: The Prime Minister recently inaugurated the Vikramaditya Vedic Clock, which is mounted on an 85-foot tower within Jantar Mantar in Ujjain. It is the world's first 'Vedic Clock', designed to display time according to the ancient Indian traditional Panchang (time calculation system). It has been positioned on an 85-foot tower within Jantar Mantar in Ujjain, Madhya Pradesh. It also provides information on planetary positions, Muhurat, astrological calculations, and predictions. In addition to this, **it also indicates Indian Standard Time (IST) and Greenwich Mean Time (GMT).** The clock will calculate time from one sunrise to another. **The period between the two sunrises will be divided into 30 parts,** whose one hour consists of 48 minutes, according to ISD. The reading will start from 0:00 with the sunrise functions for 30 hours (an hour of 48 minutes). It **has been developed by Lucknow-based Sanstha Arohan,** using digital interventions, enabling it to be connected to the internet and provide a wide range of features through a mobile app named after the clock.

Ujjain's rich heritage in timekeeping dates back centuries, with the city playing a pivotal role in determining India's time zones and time difference. **Ujjain is located at the precise point of interaction with zero meridian and Tropic of Cancer.** Before 82.5E longitude was adopted for IST, Ujjain (75.78E) was considered as Bharat's time meridian. **The Vikrami Panchang and Vikram Samvat calendars are also released from Ujjain, which makes Ujjain the ideal location to have the Vaidik Clock.**

2ND MARCH

1. World Wildlife Day: It is celebrated to promote sustainable practices that can help conserve biodiversity and raise public awareness of the need to protect and care for animals. It aims to raise awareness of the interconnectedness of all living things on our planet and to promote peaceful coexistence between humans and animals through activism, campaigning and education. It was first proposed by Thailand to the UN General Assembly in 2013. The idea was to set aside a day to promote awareness of wild animals and plants around the world. The General Assembly adopted a resolution in 2013, designating March 3 as World Wildlife Day in 2014.

The CITES, a global agreement to ensure that international trade in specimens of wild animals and plants does not threaten their survival, was signed on this day in 1973. **Theme of WWD 2024: "Connecting People and Planet: Exploring Digital Innovation in Wildlife Conservation,"** highlights the potential of technology to advance conservation efforts.

2. Nhava Sheva Port: The Port of Nhava Sheva lies to the east of the Port of Mumbai, about six nautical miles away across Thane Creek on the Arabian Sea. It is also commonly known as the Jawaharlal Nehru Port, as it is run by the Jawaharlal Nehru Port Trust. It is known to be the busiest port in India and deals with almost half of the country's imports and exports. **The Port of Nhava Sheva was commissioned in 1989 as a satellite port to relieve the Port of Mumbai from heavy congestion.** As a small port in its early years, it only had single terminals for bulk cargos and containers. It has since expanded to include five privately-operated port terminals for containerized cargo handling and also a facility for handling bulk liquid cargo. **It is recognized as one of the top 30 global container ports in terms of size and capacity.**

3. Press and Registration of Periodicals Act (PRP Act), 2023: It has replaced the colonial era Press and Registration of Books Act dating back to 1867. **The office of Press Registrar General of India – PRGI (erstwhile Registrar of Newspapers for India – RNI) shall be carrying out the purposes of the new Act.** It provides for an online system for facilitating the registration of newspapers and other periodicals in the country. The new system replaces the existing manual, cumbersome processes involving multiple

steps and approvals at various stages. The **Ministry of Information and Broadcasting launched the Press Sewa Portal, the online portal of the Press Registrar General, for receiving various applications as mandated by the new Act.**

All applications, including the intimation by the printer of a periodical, application for registration of a facsimile edition of a foreign periodical, the application by a publisher for obtaining a certificate of registration of a periodical, application for revision of certificate of registration, application for transfer of ownership of periodicals, furnishing annual statement by the publisher of a periodical, and procedure for desk audit for verification of circulation of a periodical will be online through the Press Sewa Portal.

Notably, the PRP Act exempts books and journals from the purview of registration necessitated by the old PRB Act, focusing solely on periodicals, which are defined as publications, including newspapers, published and printed at regular intervals containing public news or commentary, but excluding scientific, technical, and academic books or journals

4 MARCH

1. Global Resource Outlook: It is the flagship report of the International Resource Panel of United Nations Environment Programme. This year's report sheds light on how resources are essential to the effective implementation of the Agenda 2030 and multilateral environmental agreements to tackle the triple planetary crisis. **It brings together the best available data, modelling and assessments from 180 countries,** seven world regions and four income groups, to analyse trends, impacts and distributional effects of resource use.

Highlights: It presents a stark picture of global inequality, where low-income countries consume six times less materials compared to wealthy countries, despite generating 10 times less climate impacts. **Global production and consumption of material resources has grown more than three times over the last 50 years, growing at an average of more than 2.3 per cent a year, despite the increase being the main driver of the triple planetary crisis.** The consumption and use of resources is largely driven by demand in upper income countries.

The extraction and processing of material resources — including fossil fuels, minerals, non-metallic minerals and biomass — accounts for over 55 per cent of greenhouse gas (GHG) emissions and 40 per cent of particulate matter poisoning the environment. **The extraction and processing of agricultural crops and forestry products accounts for 90 per cent of land-related biodiversity loss and water stress and a third of GHG emissions.** The extraction and processing of fossil fuels, metals and non-metallic minerals including sand, gravel and clay account for 35 per cent of global emissions.

2. OPEC+: It is a group of oil-exporting countries which meets regularly to decide how much crude oil to sell on the world market.

Origin: These nations came to an accord towards the end of 2016 **“to institutionalize a framework for cooperation between OPEC and non-OPEC producing countries on a regular and sustainable basis.”** These nations aim to work together on adjusting crude oil production to bring stability to the oil market. OPEC+ controls about 40% of global oil supplies and more than 80% of proven oil reserves. At the core of this group are the **members of OPEC (the Organization of the Oil Exporting Countries), which are mainly Middle Eastern and African countries.**

Members: It comprises OPEC countries plus Azerbaijan, Bahrain, Brunei, Kazakhstan, Russia, Mexico, Malaysia, South Sudan, Sudan, and Oman.

3. Organization of the Petroleum Exporting Countries (OPEC): It is a permanent intergovernmental organization of oil-exporting countries.

Mission: To coordinate and unify the petroleum policies of its member countries. Ensure the stabilization of oil prices in the international oil markets

Formation: It was **founded in Baghdad, Iraq, with the signing of an agreement in September 1960 by five countries**, namely the Islamic Republic of Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela. **Currently, it has 12 members**, including Algeria, Congo, Equatorial Guinea, Gabon, Libya, Nigeria, and the United Arab Emirates.

Headquarters: Vienna, Austria.

5 MARCH

1. Gevra Coal Mine: Chhattisgarh-based Coal India subsidiary South Eastern Coalfield Limited’s Gevra mine is set to become largest coal mine in Asia. The mine has been granted environmental clearance to expand production capacity to 70 million tons per annum from the current 52.5 million tons. **Gevra also became the largest coal mine in the country last year with annual production** for FY 22-23 reaching 52.5 million tons and has been contributing towards energy security of the country for more than 40 years. **Eco-friendly blast-free mining technology in the form of Surface Miner, Ripper Mining have been deployed in the mine and one of the highest capacity HEMM machines.** It is used for overburden removal in the mine. It also has **first-mile connectivity equipped with a conveyer belt, Silos and Rapid Loading System for swift and eco-friendly coal evacuation.**

2. Coal classification: Classification of Coal can be done on the basis of carbon content and time period.

On the basis of carbon content it can be classified into following three types:

- **Anthracite:** It is the **best quality of coal with highest calorific value and carries 80 to 95% carbon content.** It ignites slowly with a blue flame and found in small quantities in Jammu and Kashmir.
- **Bituminous:** It has a low level of moisture content with 60 to 80% of carbon content and has a high calorific value. **Jharkhand, West Bengal, Odisha, Chhattisgarh and Madhya Pradesh have deposits of Bituminous.**
- **Lignite carries 40 to 55% carbon content** and is often brown in colour with high moisture content thus, gives smoke when burnt. **Rajasthan, Lakhimpur (Assam) and Tamil Nadu has deposits of Lignite.**
- Peat is the first stage of transformation from wood to coal with low calorific value and less than 40% carbon content.

3. Women, Business and Law Index: It is a **World Bank index to measure how laws and regulations affect women’s economic opportunity on a scale from 0**

to 100, where 100 means equal legal rights for men and women. The report covers eight related areas: Mobility, workplace, pay, marriage, parenthood, entrepreneurship, assets and pension. The data offer objective and measurable benchmarks for evaluating global progress toward legal gender equality. It is the 10th edition of the report.

Globally, none of the countries has a full score in the new index, indicating that women did not enjoy equal rights in any of the countries. **India's ranking improved to 113 out of 190 countries. Indian women enjoyed 60% of the legal rights given to men as per the new report, lower than the global average of 64.2%.**

4. Project Seabird: The largest naval infrastructure project for India, it involves creation of a naval base at Karwar, Karnataka, on the west coast of India. In the post-Indo-Pak War of 1971 scenario, India learned that the Indian Navy needs an additional naval base since Mumbai Harbour faced congestion, which led to security issues for its Western Fleet. This is a massive project with the first sealift facility in the country and a transfer system for docking and undocking ships and submarines. Its first phase, which included the construction of a deep-sea harbour, breakwaters dredging, a township, a naval hospital, a dockyard uplift centre and a ship lift, was commissioned in 2005. **The development of phase 2 of INS Kadamba commenced in 2011.** This phase is further divided into **2A and 2B. It was planned to expand the facilities to dock additional warships and a new Naval Air Station,** among other projects. Once completed, it will be the largest naval base in the Eastern Hemisphere. It will be able to accommodate around 32 warships, 23 submarines and hangers for several aircraft.

6 MARCH

1. LEAPS (Logistics Excellence, Advancement, and Performance Shield) Initiative: It is a **flagship initiative by the logistics division of DPIIT, Ministry of Commerce and Industry,** designed to acknowledge and celebrate the best practices and innovations within the logistics industry.

It would celebrate the demonstrated leadership of the logistics sector in transforming the Indian logistics industry and realizing the combined vision

of the National Logistics Policy 2022 and PM GatiShakti. **The National Logistics Policy was introduced to create a single-window e-logistics market, focusing on the need for skill development, economic growth, and competitiveness in the logistics sector.** It aims to reduce logistics costs, improve India's ranking in the Logistics Performance Index, and establish a data-driven decision support mechanism.

2. MethaneSAT: The **MethaneSAT satellite was launched aboard a SpaceX Falcon9 rocket from California.** It will track and measure methane emissions at a global scale. It will provide more details and have a much wider field of view than any of its predecessors. **The entity behind MethaneSAT is the Environmental Defense Fund (EDF) — a US-based nonprofit environmental advocacy group.** It is developed in collaboration with Harvard University, the Smithsonian Astrophysical Observatory, and the New Zealand Space Agency.

It will orbit the Earth 15 times a day, monitoring the oil and gas sector. It will create a large amount of data, which will tell "how much methane is coming from where, who's responsible, and are those emissions going up or down over time", The data collected by this will be made public for free in near real-time. It is equipped with a high-resolution infrared sensor and a spectrometer.

It can track differences in methane concentrations as small as three parts per billion in the atmosphere. It also has a wide-camera view — of about 200 km by 200 km — allowing it to identify larger emitters so-called "super emitters". The collected data will be analysed using cloud-computing and AI technology developed by Google — the company is a mission partner — and the data will be made public through Google's Earth Engine platform..

3. UDGAM Portal: UDGAM refers to Unclaimed Deposits-Gateway to Access inforMation, which is an online portal developed by the Reserve Bank of India (RBI). It facilitates the registered users to search unclaimed deposits/accounts across multiple banks at one place in a centralised manner. The unclaimed deposits can be claimed only from the respective bank. **There are 30 banks, which are part of UDGAM portal, and they cover around 90% of unclaimed**

deposits (in value terms) in Depositor Education and Awareness (DEA) Fund of RBI. This portal provides information related to both individuals and non-individuals category unclaimed deposits. After registration on the portal a person will get Unclaimed Deposit Reference Number (UDRN) which is a unique number generated through Core Banking Solution (CBS) by banks and assigned to each Unclaimed account/deposit transferred to Depositor Education and Awareness (DEA) Fund of RBI. This number is used so that the account holder or the bank branch where account is maintained, cannot be identified by any third party.

7 MARCH

1. India's First Under-River Metro Tunnel: Prime Minister recently inaugurated a metro train service in Kolkata, marking the opening of India's first under-river metro tunnel. It is a **part of Kolkata Metro's East-West Corridor**. It passes under the Hooghly River and forms part of section from Howrah Maidan to Esplanade. **The stretch also has the deepest metro station in the country, the Howrah Maidan station, at 32 metres below ground level.**

River Hooghly: The Hooghly River, also known as the **Bhagirathi-Hoogly and Kati-Ganga Rivers**, is one of the significant rivers in West Bengal. It is a **distributary or arm of the Ganges River**. It is formed in Murshidabad, where the Ganga splits into two parts, while the part flowing through Bangladesh is called the Padma. **The Hooghly River is silted up above Kolkata, and the river flows to the west and south to the estuary of Rupnarayan** and then south and southwest to enter the Bay of Bengal through a 32-kilometer- wide estuary.

The Hooghly's majority of water comes from the Farakka Feeder Canal instead of natural water. **The Farakka Barrage is a dam that diverts water from the Ganges into a canal near the town of Tildanga in Malda district.** This supplies the Hooghly with adequate water even in the dry season. Haldi, Ajay, Damodar and Rupnarayan are the rivers that feed the lower reaches of the Hooghly. **The important cities near the Hoogli River are Jiaganj, Azimganj, Murshidabad, and Baharampur.**

2. Rupa Tarakasi: The famous silver filigree (Rupa Tarakasi) of the millennium Cuttack city in Odisha recently received the Geographical Indication (GI)

tag. It is one of the most exquisite silver crafts. This centuries-old, sophisticated craft is practiced in the silver city of Cuttack, Odisha. It is **known to have existed as far back as the 12th century. The art form received considerable patronage under the Mughals.**

In this work of craft, silver **bricks are transformed into thin, fine wires (tara) or foils, from which silver filigree is made with all designs (kasi).** While different grades of silver are used in the main metal alloy, the craftsmen also use other metals like copper, zinc, cadmium and tin. **The artists involved with this filigree work are called "Rupa Banias" or "Roupyakaras" (in Odia).** This craftsmanship extends to creating various items, including jewellery worn by Odissi dancers, decorative artifacts, accessories, and religious and cultural pieces.

3. Majuli masks: Recently, the **traditional Majuli masks and Majuli manuscript painting in Assam were given a Geographical Indication (GI) tag.** These are handmade masks traditionally used to depict characters in bhaonas, or theatrical performances with devotional messages under the neo-Vaishnavite tradition, introduced by the 15th-16th century reformer saint **Srimanta Sankardeva. Srimanta Sankardeva established this art of masks through a play called Chinha Jatra.** The masks can depict gods, goddesses, demons, animals and birds — **Ravana, Garuda, Narasimha, Hanuman, Varaha Surpanakha all feature** among the masks. They can range in size from those covering just the face (mukh mukha), to those covering the whole head and body of the performer (cho mukha).

Material used: The masks are made of bamboo, clay, dung, cloth, cotton, wood and other materials available in the riverine surroundings of their makers

4. Frontier Technology Lab: It is an **advanced version of Atal Tinkering Lab.** It aims to advance the government's agenda of digital inclusion, skilling and growth.

Collaboration: Atal Innovation Mission and Meta will partner to set up FTLs in schools of strategic importance to ensure that students from diverse backgrounds across India will have equal opportunities to learn and engage with frontier technologies.

Funding: The FTLs will be funded by Meta and Atal

Innovation Mission will be the knowledge partner.

It is equipped with state-of-the-art infrastructure, including all components of the Tinkering Lab to empower students to innovate using technologies like **Artificial Intelligence, Augmented & Virtual Reality, Blockchain, Cybersecurity, Robotics, 3D Printing and Internet of Things.**

Significance: The labs support the Government's focus on equipping youth with digital skills to succeed in the evolving landscape of technology and the global economy.

8 MARCH

1. Orans: Orans are traditional sacred groves found in Rajasthan. These are community forests, preserved and managed by rural communities through institutions and codes that mark such forests as sacred. There are often local deities associated with Oran. They are rich in biodiversity and usually include a water body. Orans are also spaces where herders take their livestock for grazing and are places for communal congregations, festivals and other social events, the performance of which is linked to agrarian rhythms and the continued commitment of the communities towards environmental conservation. Orans also form the natural habitat for India's most critically endangered bird, the Great Indian Bustard (GIB), a protected species under the Wildlife Protection Act, which is also the State bird of Rajasthan.

2. Indian Coast Guard (ICG): It is an armed force that protects India's maritime interests and enforces maritime law, with jurisdiction over the territorial waters of India, including its contiguous zone and exclusive economic zone. The ICG, working in coordination with other Union agencies, institutions and authorities, safeguards the maritime interests and security of India, assists vessels and fisherman in distress and protects the maritime environment. It was formally established in 1978 by the Coast Guard Act, 1978, as an independent Armed force of India. It operates under the Ministry of Defence. The organization is headed by the Director General Indian Coast Guard (DGICG).HQ: New Delhi.

3. Sea Defenders-2024: It is a joint exercise between the Indian Coast Guard and the United States Coast Guard. Location: Off the coast of Port Blair,

Andaman and Nicobar Islands. The two-day exercise will focus on maritime piracy and asymmetric threats, including simulated drone attacks on commercial merchant traffic, joint maritime search and rescue operations, major firefighting, marine pollution response, and counter-drug interdiction exercises.

4. School Soil Health Programme: Department of Agriculture and Farmers welfare in collaboration with Department of School Education and Literacy has undertaken a pilot project on school soil health programme. **Under the project, 20 soil labs were set up in 20 schools of Kendriya and Navodaya Vidyalaya of rural areas.** Study modules were developed and training was given to students and teachers. **Kendriya Vidyalaya, Navodaya Vidyalaya and Eklavya Model Schools have been taken under this programme.** Schools are being onboarded on the portal and online batches are being created. **Department of Agriculture and Farmers welfare (DA&FW) through National Bank for Agriculture and Rural Development (NABARD) will setup soil labs in these schools.** School students will collect soil samples, test in the labs set up in schools and generate Soil health Card. After generating Soil Health Card, they will go to the farmers and educate them about recommendation of Soil health Card.

9 MARCH

1. DIETS of Excellence: Union Minister of Education and Skill Development & Entrepreneurship launched various initiatives namely, **DIETS of Excellence and National Mission for Mentoring (NMM).** To strengthen teacher training, the District Institutes of Education and Training (DIET) will be developed into centres of excellence.

Funding: Financial assistance will be provided to States/UTs for the physical upgradation of all 613 DIET to develop them as DIET of Excellence in the country in a phased manner in the next five years. Upto 15 Crore per DIET will be provided under the Centrally Sponsored Scheme of Samagra Shiksha for improving various infrastructural facilities.

District Institutes of Education and Training: It is an integral part of India's education system. It was established in every district of India as a result of the National Policy on Education 1986.

DIETs were designed to provide quality training and support to teachers, teacher educators, and other

educational personnel. **The initial focus of DIETs was on providing pre-service and in-service training to teachers and teacher educators. They also work with the State Council of Educational Research and Training (SCERT) to develop curriculum frameworks that are aligned with national education policies.**

2. Shankaracharya Temple: The Shankaracharya Temple in Srinagar, located on top of the Shankaracharya Hill, is a Hindu temple dedicated to Lord Shiva and is one of the oldest shrines in Kashmir. The temple dates back to 200 BC, however present structure was probably constructed in 9th Century AD.

It is said that the temple was originally built by Jaluka, the son of Emperor Ashoka, a follower of Buddhist religion; and hence, the temple is also regarded as scared by the Buddhist people, and they called this temple as Pas-Pahar. Also known as Jyesteshwara Temple, the temple is named after the great philosopher Shankaracharya who is believed to have visited Srinagar about ten centuries ago. It is believed that Adi Shankaracharya attained spiritual enlightenment at this place, and it was after this enlightenment that he went out and formed the four Hindu schools of Advaita, or the philosophy of non-dualism. **The temple's architecture reflects a blend of Hindu and Buddhist styles and boasts intricate carvings that depict various mythological stories.** The early Shikhara style is prominently evident in the building design and is indicative of a horseshoe arch type of pattern. The temple sits on a solid rock and is constructed on a high octagonal platform. **The main sanctum sanctorum houses a black stone idol of Lord Shiva along with other deities.**

3. Right to Repair Portal: The Ministry of Consumer Affairs (MCA) has launched the Right to Repair Portal India to provide consumers with access to repair information for their products and reduce e-waste on the occasion of National Consumer Rights Day 2022. The portal brings together information from different sectors. All public information related to products, services, warranties, terms, and conditions, etc. will also be easily accessible through this portal. It gives consumers access to affordable repair mobile phones, appliances, and other electronic devices by original equipment manufacturers (OEMs) or third-party repairers. **The aim is to offer a cheaper alternative to expensive replacements to customers, instead of buying new products**

altogether. The portal will carry information for enabling consumers to self-repair, knowing about authorized repairers, and promoting third party repairers. It will also benefit small repair shops, as a list of authorised third-party repairs will be provided.

11 MARCH

1. Yaounde Declaration: It was signed by the health ministers of 11 African countries with the highest burden of malaria, committing to accelerated action to end deaths from the malaria disease. It was signed at the Yaoundé conference, co-hosted by the World Health Organization (WHO) and the Government of Cameroon. The 11 countries that signed the declaration are: Burkina Faso, Cameroon, the Democratic Republic of the Congo, Ghana, Mali, Mozambique, Niger, Nigeria, Sudan, Uganda and Tanzania. These countries carry roughly 70% of the global malaria burden.

2. Exercise Cutlass Express: It is an exercise conducted in East African coastal regions and the West Indian Ocean to counter malign influence, aggression and activity along overlapping command seams and maritime regions. It is a premier multinational maritime exercise sponsored by U.S. Africa Command (AFRICOM) and led by U.S. Naval Forces Europe-Africa/U.S. Sixth Fleet. It brings together maritime forces from East Africa, West Indian Ocean nations, Europe, North America and several international organizations to enhance maritime law enforcement capacity, promote national and regional security and increase interoperability among participating nations

3. Help Group – Bank Linkage Programme: It was launched by NABARD in 1992 which has blossomed into the world's largest microfinance project. It has evolved as a cost-effective mechanism for providing financial services to the unreached and underserved poor households. **The components of Self Help Group (SHG) Bank linkage (BL) are as follows:**

- Training and sensitization of Bank Branch Managers
- Training and positioning of Bank Sakhis at Rural Bank Branches
- Initiate Community Based Repayment Mechanism (CBRM) at Rural Bank Branches
- Credit Linkage of SHGs

4. Academy Awards: These awards are popularly known as the Oscars given for artistic and technical merit in the film industry. These are given annually by the Academy of Motion Picture Arts and Sciences (AMPAS). The awards are an international recognition of excellence in cinematic achievements. The awards were first presented in 1929 and winners receive a gold-plated statuette commonly called Oscar. The various category winners are awarded a copy of a golden statuette, officially called the "Academy Award of Merit". **Winners are chosen from the 24 categories:** best picture, actor, actress, supporting actor, supporting actress, directing, original screenplay and adapted screenplay etc.

Nomination: Only members of the Academy of Motion Picture Arts and Sciences may nominate and vote for candidates for the Oscars. The entire academy membership nominates the candidates for best picture and votes to determine the winners in most of the categories.

12 MARCH

1. Citizenship (Amendment) Act, 2019: The Citizenship Amendment Act (CAA) amends the Citizenship Act of 1955 to provide a path to Indian citizenship for Hindus, Sikhs, Christians, Buddhists, Jains, and Parsis who migrated from neighbouring Muslim-majority countries such as Pakistan, Bangladesh, and Afghanistan, before December 31, 2014.

Under the CAA, migrants who entered India till December 31, 2014, and had suffered "religious persecution or fear of religious persecution" in their country of their origin would be made eligible for accelerated citizenship. It relaxed the residence requirement for naturalisation of these migrants from twelve years to just six. **The law exempts the tribal areas of Assam, Meghalaya, Mizoram, and Tripura as included in the Sixth Schedule of the Constitution, including the tribal areas of Karbi Anglong in Assam, Garo Hills in Meghalaya, Chakma district in Mizoram, and Tribal areas district in Tripura.** It also includes a provision for the cancellation of Overseas Citizen of India (OCI) registration if the OCI cardholder violates any provision of the Citizenship Act or any other applicable law.

2. Per- and Polyfluoroalkyl substances (PFAS): These are a group of human-made chemicals that have been widely used in various industrial and commercial applications. They were first used in the 1940's and are now in hundreds of products. These compounds are also known as "forever chemicals" because they do not break down naturally. Chemically, individual PFAS can be very different. However, all have a carbon-fluorine bond, which is very strong and therefore, they do not degrade easily. **These are known for their unique properties, such as high chemical stability and resistance to heat, grease, and water.** These are used in stain- and water-resistant fabrics and carpeting, cleaning products, paints, and fire-fighting foams. **The widespread use of PFAS has resulted in increasing levels of contamination of the air, water, and soil.** Exposure to PFA attributes to variety of health risks including decreased fertility, developmental effects in children, interference with body hormones, increased cholesterol levels and increased risk of some cancers.

3. Mission Divyastra: The maiden flight test of the locally developed Agni-5 missile with multiple independently targetable re-entry vehicle (MIRV) technology and code named as Mission Divyastra. It uses a three-stage solid fuelled engine and has a range of more than 5,000km. Agni series has medium to Intercontinental versions of Agni missile systems 1 to 5 with a varying ranges — starting from 700 km for Agni-1 to 5000 km and above for Agni-5. In June 2021, DRDO successfully tested Agni P, a canisterised missile with a range capability between 1,000 and 2,000 km. This means **that the missile can be launched from road and rail platforms, making it easier for it to be deployed and launched at a quicker pace.**

MIRV technology: It can target multiple targets that can be hundreds of kilometers apart with a single missile. This Agni, **capable of carrying nuclear warheads, has a range of more than 5,000 km, making it a long-range missile.** These missiles can be launched from land or from sea from a submarine.

In contrast to a traditional missile, which carries one warhead, MIRVs can carry multiple warheads. Warheads on MIRVed missiles can be released from the missile at different speeds and in different

directions. This has propelled India into an exclusive league of countries that have the capability to deploy MIRV missile systems, including the US, the UK, France, Russia and China.

13 MARCH

1. Pradhan Mantri Samajik Utthan evam Rozgar Adharit Jankalyan (PM-SURAJ) portal: The portal will act as a one-stop point where people from disadvantaged sections of society can apply for and monitor the progress of all loan and credit schemes already available to them. **This initiative will help in providing financial assistance directly to beneficiaries, eliminating middlemen and commissions.** It aims at uplifting the most marginalised segments of society. Implementing agency: Ministry of Social Justice and Empowerment and its departments.

Other measures include:

- reservation of 27% seats for the OBC in the all-India quota of medical seats,
- greater opportunities for OBC students in NEET examinations,
- support through the National Overseas Scholarship for underprivileged students pursuing Master and PhD degrees abroad.
- Keeping in mind the entrepreneurship among Dalits, the **government has launched the Ambedkar Social Innovation and Incubation Mission.**

2. NAMASTE (National Action for Mechanised Sanitation Ecosystem) Scheme: To ensure safety and dignity of sanitation workers in urban India as well as providing sustainable livelihood to these workers. It is a **joint initiative of the Ministry of Social Justice & Empowerment (MoSJE) and the Ministry of Housing and Urban Affairs (MoHUA).**

Implementing agency: National Safai Karamchari Financial Development Corporation (NSKFDC).

Five hundred cities (converging with AMRUT cities) will be taken up under this phase of NAMASTE. **It will be implemented for the period 2022-26.**

Aims

- Zero fatalities in sanitation work in India
- All sanitation work is performed by skilled workers
- No sanitation workers come in direct contact with

human faecal matter

- Sanitation workers are collectivized into SHGs and are empowered to run sanitation enterprises
- All Sewer and Septic tank sanitation workers (SSWs) have access to alternative livelihoods

3. KIRTI Programme: It is aimed at school children between nine and 18 years age group. The nationwide scheme will have two main objectives:

- To hunt talent from every nook and corner of the country and
- To use sports as a tool to curb addiction towards drugs and other gadgetry distractions.

KIRTI made a solid launch across 50 centres in India. Fifty thousand applicants are being assessed in the first phase across 10 sports, including athletics, boxing, wrestling, hockey, football and wrestling. **KIRTI's athlete-centric programme is conspicuous by its transparent selection methodology based on Information Technology.** Data analytics based on Artificial Intelligence is being used to predict the sporting acumen in an aspiring athlete.

14 MARCH

1. Electric Mobility Promotion Scheme 2024: It aims to further accelerate the adoption of Electric Vehicles in the country. It is a fund limited scheme with a total outlay of Rs. 500 crore for the period of 4 months. It is for **faster adoption of electric two-wheeler (e-2W) and three-wheeler (e-3W) to provide further impetus to the green mobility** and development of electric vehicle (EV) manufacturing eco-system in the country.

Eligible EV categories: Two Wheelers (electric) (e-2W), Three-wheeler (electric) including registered e-rickshaws & e-carts and L5 (e-3W). **The scheme will be applicable mainly to those e-2W and e-3Ws registered for commercial purposes.** Further, in addition to commercial use, privately or corporate owned registered e-2W will also be eligible under the scheme. To encourage advance technologies, the benefits of incentives, will be extended to only those vehicles which are fitted with advanced battery.

Nodal Ministry: Ministry of Heavy Industries

2. Global Methane Tracker: It is an annual report released by the International Energy Agency (IEA). It is based on the most recently available data on methane emissions from the energy sector and

incorporates new scientific studies, measurement campaigns, and information collected from satellites.

Highlights of Global Methane Tracker 2024:

- **Methane emissions from fuel use in 2023 were close to being the highest ever at 120 million tonnes (Mt).** This is a small rise compared to 2022.
- Bioenergy, a form of renewable energy generated by plant and animal waste, caused another 10 million tons of emissions.
- The **United States leads in methane emissions from oil and gas operations, and is “closely followed” by Russia.** China, on the other hand, leads in emissions from coal operations.
- The world needs to slash methane emissions from fossil fuels by 75 percent by 2030 to achieve the Paris Agreement goal of limiting warming to 1.5°C. The IEA estimated that this goal would require about \$170 billion in spending. This is less than 5 percent of the income generated by the fossil fuel industry in 2023

3. PB-SHABD: Prasar Bharti - Shared Audio Visuals for Broadcast and Dissemination (PB-SHABD) platform has been designed to provide daily news feeds in video, audio, text, photo and other formats to the subscribers from media landscape. It is **powered by the vast network of Prasar Bharati reporters, correspondents and stringers, the service would bring you the latest news from different parts of the country.** It will be a single point source of news content for all organizations. SHABD service is being offered free of cost for the first year as an introductory offer and will provide news stories in all major Indian languages across fifty categories. The shared feeds can be used for customized storytelling across different platforms. As an introductory offer, the services would be available free of cost and help the smaller newspapers, TV channels and digital portals immensely.

15 MARCH

1. National Mission for Edible Oils - Oil Palm (NMEO-OP): Prime Minister recently inaugurated the first Oil Palm Processing Mill under Mission Palm Oil in Arunachal Pradesh. **Launched by the Government of India in August 2021, NMEO-OP targets a substantial increase in oil palm cultivation and crude palm oil production.** It is a Centrally Sponsored Scheme with a special focus on the North east region and the Andaman and Nicobar Islands,

with a focus on increasing the area and productivity of oilseeds and Oil Palm.

Targets:

- To increase the area of oil palm to 10 lakh hectares from 3.5 lakh ha during 2019-20 by 2025-26 (an additional 6.50 lakh ha).
- To increase the Crude Palm Oil production from 0.27 lakh tonnes during 2019-20 to 11.20 lakh tonnes by 2025-26.
- Increase consumer awareness to maintain a consumption level of 19.00 kg/person/annum till 2025-26.

2. World Gold Council (WGC): It is the market development organisation for the gold industry. It is a nonprofit association formed in 1987 whose members comprise the world's leading and most forward-thinking gold mining companies. It was established to promote the use of and demand for gold through marketing, research, and lobbying. It is also the global authority on gold, and they offer comprehensive analyses of the industry.

Headquartered in London, with operations in India, China, Singapore, and the USA, the WGC covers the markets which comprise about three-quarters of the world's annual gold consumption. It is an advocate for gold consumption. The WGC aims to maximize the industry's potential growth by monitoring and defending existing gold consumption. It achieves this by setting up gold standards, proposing policies, ensuring fairness and sustainability in the gold mining industry and promoting the usage and demand for gold for individuals, industries, and institutions. It also co-sponsors research in the development of new uses for gold, or of new products containing gold. **WGC was the creator of the first gold exchange-traded fund.**

3. Darien Gap: The treacherous Darien Gap route that spans parts of Central and South America has seen an increasing number of people attempting to pass on their way to claiming asylum in the US. It is a stretch of densely forested jungle across northern Colombia and southern Panama. Roughly 60 miles (97 kilometres) across, the terrain is muddy, wet and unstable. It has become a major route for global human migration. It is the geographic region of the easternmost Isthmus of Panama that extends into northwestern Colombia, around the Gulf of Urabá (a section of the Gulf of Darién). It forms the

physiographic link between Central and South America. A hot, humid area typified by tropical rainforests, mangrove swamps, and low mountain ranges with cloud forest vegetation, Darién has always been sparsely populated.

4. Human Development Index: It is a summary composite measure of a country's average achievements in three basic aspects of human development: **health, knowledge and standard of living.** It is a **measure of a country's average achievements in three dimensions of human development: a long and healthy life, as measured by life expectancy at birth; knowledge, as measured by mean years of schooling and expected years of schooling; and a decent standard of living, as measured by GNI per capita in PPP terms in US\$.**

This is expressed as a value between 0 and 1. The higher a country's human development, the higher its HDI value. **The HDI is the geometric mean of normalized indices for each of the three dimensions. The HDI also embodies Amartya Sen's "capabilities" approach to understand human well-being,** which emphasizes the importance of ends (like a decent standard of living) over means (like income per capita). **Since 1990, the United Nations Development Programme (UNDP) has been publishing the Human Development Report every year.**

Highlights of the recent report

- The report **stated that while India ranked 135 in 2021, it had moved up to 134 in 2022.** A total of 193 countries were ranked in 2022 and 191 countries in 2021.
- While the country has moved up in 2022, it is still behind its South Asian neighbours, such as Bangladesh (129th), Bhutan (125th), Sri Lanka (78th) and China (75th).

16 MARCH

1. Eastern Maritime Corridor (EMC): It is a proposed sea route between the Indian port of Chennai and the Russian port of Vladivostok.

- Once complete, it **will take 24 days, down from presently over 40 days,** to transport goods from India to Far East Russia.
- The **EMC will cover a distance of about 5,600**

nautical miles, which is significantly shorter than the current route via the Suez Canal.

- For India, it will provide a shorter and more efficient route to access the markets of the Far East, such as China and Japan.
- **Vladivostok:** It is a **major city in Russia,** located in the Far East of the country.
- It is **located on the Golden Horn Bay,** north of North Korea, and a short distance from Russia's border with China.
- It is the **largest port on Russia's Pacific coast,** and home to the Pacific Fleet of the Russian Navy.
- It is the eastern railhead of the legendary Trans-Siberian Railway, which connects the Far East of Russia to the capital Moscow, and further west to the countries of Europe.

2. Shipra River: The Shipra, also known as the Kshipra, is a river in Madhya Pradesh state. It is a perennial river and is considered as sacred as the Ganga River by the Hindus.

- It **originates in the Vindhya Range from a hill called Kakri-Tekdi,** and situated at a distance of 11 km from Ujjain.
- It flows across the Malwa Plateau to join the Chambal River.
- The Puranas, or ancient Hindu texts, put forward that the Shipra originated from the heart of Varaha, Lord Vishnu's incarnation as a boar.
- Also on the **banks of the Shipra is Sage Sandipani's ashram or hermitage,** where Krishna, Lord Vishnu's eighth incarnation, had studied.
- It finds mention not only in ancient Hindu texts but also in Buddhist and Jain scriptures.
- The **holy city of Ujjain is located on the right bank of the Shipra River.** The famous Kumbha Mela takes place in the ghats of this city, once every 12 years, a yearly celebration of the river goddess Kshipra.
- **Major Tributaries:** Khan and Gambhir

3. Grievance Redressal Assessment Index: The Ministry of Home Affairs has consistently ranked amongst the top 10 Ministries in 2023-24 in the grievance redressal assessment index (GRAI).

- It was **conceptualised and designed by the Department of Administrative Reforms and Public Grievances (DARPG),** Government of India.

- **Objective:** To present an organisation-wise comparative picture and provide valuable insights about strengths and areas of improvement regarding the grievance redressal mechanism.
- It is **based on a comprehensive index in the dimensions of Efficiency, Feedback, Domain and Organisational Commitment.** It uses data from the Centralised Public Grievance Redressal and Management System (CPGRAMS).

4. ULLAS Initiative: The Understanding Lifelong Learning for All in Society (ULLAS) initiative. It **imparts basic education, digital and financial literacy and critical life skills to citizens aged 15 and above who lost on the opportunity to go to school.** It is being implemented through volunteerism.

- Its objective is to impart not only Foundational Literacy and Critical Life Skills, Vocational Skills, Basic Education and Continuing Education.
- The ULLAS app can be used for registration of learners and volunteers either through self-registration or by surveyors. It will serve as a digital gateway for learners to engage in diverse learning resources through the DIKSHA portal of NCERT.
- **Ministry:** Ministry of Education.

17 MARCH

1. Interim Bail: It is a temporary form of bail granted during the pendency of an application for anticipatory or regular bail. It provides a brief respite for the accused, temporarily releasing them from custody. **It is conditional and can be extended based on the circumstances.** If the interim bail expires and the accused fails to meet the requirements for its continuation or pay the necessary amount, their right to freedom is revoked, and they may be retaken into custody. **It serves as an interim measure until a final decision is made on the bail application, preventing unnecessary detention of the accused during this period.**

In the case of **Sukhwant Singh & Ors v. State of Punjab**, the Supreme Court held that the interim bail is a measure especially to safeguard the reputation of an accused. Also, the court has the inherent power to grant bail to a person whose bail application is still pending for disposal. If the

accused's request for anticipatory bail or interim bail is denied by the court, the police may detain him without a warrant.

2. Ballistic Missiles: A ballistic missile is a **rocket-propelled, self-guided strategic-weapons system that follows a ballistic trajectory to deliver a payload from its launch site to a predetermined target.** They are powered initially by a rocket or series of rockets in stages, but then follow an unpowered trajectory that arches upwards before descending to reach its intended target. They can carry conventional high explosives as well as chemical, biological, or nuclear munitions. They can be launched from aircraft, ships and submarines, in addition to land-based silos and mobile platforms.

There are four general classifications of ballistic missiles:

- **Short-range:** less than 1,000 kilometers (approximately 620 miles), also known as "tactical" ballistic missiles.
- **Medium-range:** between 1,000 and 3,000 kilometers also known as "theater" ballistic missiles.
- **Intermediate-range:** between 3,000 and 5,500 kilometers
- **Long-range:** more than 5,500 kilometers, also known as intercontinental or strategic ballistic missiles.

3. Exercise LAMITIYE: It is a **joint military exercise between the Indian Army and Seychelles Defence Forces (SDF).** 'LAMITIYE' is a biennial training event and has been conducted in Seychelles since 2001.

4. Model Code of Conduct: It traces its origins back to the assembly elections in Kerala in 1960. **It serves as a set of conventions unanimously agreed upon by all stakeholders involved in the electoral process. Its primary objective is to ensure that campaigns, polling and counting proceed in an orderly, transparent and peaceful manner.** Additionally, it serves as a mechanism to curb any misuse of state machinery and financial resources by the ruling party. It does not possess any statutory backing but has been upheld by the Supreme Court on multiple occasions.

Activities Prohibited: Ministers and other authorities are barred from announcing any financial grants or making commitments once the elections are announced, as per the guidelines of the election

panel.

- **Once the dates for the Lok Sabha elections are announced, Ministers and other authorities are also restricted from laying foundation stones or initiating projects or schemes of any kind, except civil servants.** No project or scheme that may sway voters in favor of the ruling party can be announced after the enforcement of the Model Code of Conduct.
- Additionally, ministers are prohibited from using official machinery for campaign purposes. Official visits must not be combined with any electioneering activities after the enforcement of the Model Code of Conduct.
- **Furthermore, the use of official machinery or personnel for electioneering purposes is strictly forbidden.** Ministers and other authorities are not allowed to sanction grants or payments from discretionary funds once the elections are announced.
- Government accommodations should not serve as campaign offices or be used for holding public meetings for election propaganda by any party, as prohibited by the poll body.
- The **Election Commission of India (ECI) prohibits the issuance of advertisements at the cost of the public exchequer in newspapers** and other media during the election period.
- **The misuse of official mass media for partisan coverage of political news and publicity regarding achievements to favor the ruling party should be strictly avoided, as noted in the MCC guidelines**

19 MARCH

1. World Air Quality Report 2023: Delhi was identified as the capital city with the poorest air quality, according to a new report by World Air Quality Report 2023. It is **published by the Swiss organisation IQAir.**

- With an average air annual particulate matter 2.5 (PM2.5) concentration of 54.4 micrograms per cubic metre, **India had the third worst air quality.**
- **India was better than only two of its neighbouring countries, Bangladesh and Pakistan.**
- While Bangladesh remained the most polluted

country in the world Pakistan was second.

- It also **identified Delhi as the most polluted capital city in the world for the fourth consecutive time.** Bihar's Begusarai was termed the world's most polluted metropolitan area.
- **Ten out of the top 11 most polluted cities in the world are from India,** the other being Lahore in Pakistan.

2. Exercise Tiger Triumph: It is a **bilateral tri-Service Humanitarian Assistance and Disaster Relief (HADR) Exercise between India and the US .**It is aimed at developing interoperability for conducting HADR operations and refine Standard Operating Procedures (SOPs) to enable rapid and smooth coordination between forces of both countries.

3. The India-EFTA Trade and Economic Partnership Agreement (TEPA): It is the **latest in India's recent Free Trade Agreements (FTAs) which ventures into some uncharted territory.**

- **Investment:** TEPA sets out a target of a \$100 billion investment into India from EFTA countries and consequent one million jobs over a 15-year period. It **also provides India the ability to withdraw its tariff concessions if such expected investment is not achieved.**
- **Trade in goods:** India is mandated to eliminate tariff on most products within seven to 10 years. **With regard to India's exports to EFTA, there will be no material impact since most products face very low or zero tariff for nations which have the Most Favoured Nation (MFN) status in EFTA countries.**
- **Others:** Trade in services, Sustainable development and labour aspects, Intellectual property rights etc.

4. IceCube Neutrino Observatory: Scientists using data from the **IceCube Neutrino Observatory in Antarctica believe they have potentially found the first evidence for astrophysical tau neutrinos, called "ghost particles"**

- It is a device at the earth's South Pole that detects subatomic particles called neutrinos. **It was built and is maintained by the IceCube Collaboration, which consists of many universities worldwide led by the University of Wisconsin, Madison.**

- It consists of thousands of sensors buried more than 1.4 km beneath the ice plus multiple detectors above the surface. It is the **world's biggest 'neutrino telescope'**.
- When a neutrino interacts with the ice surrounding the sensors, it may produce some charged particles and some radiation.
- The sensors detect the radiation to infer the detection of a neutrino and use the radiation's properties to understand more about the particle.
- Neutrinos come in different types. **IceCube can identify some of them in real-time.**

20 MARCH

1. Spring Equinox: As Earth revolves around the Sun, there are **two moments each year when the Sun is exactly above the equator. These moments — called equinoxes — occur around March 19, 20 or 21 and September 22 or 23.**

- **Equinox literally means "equal night," since the length of day and night is nearly equal in all parts of the world during the equinoxes.** The March equinox marks when the Northern Hemisphere starts to tilt toward the sun, which means longer, sunnier days.
- In the Northern Hemisphere, the **March equinox is called the vernal equinox**, because it signals the beginning of spring (vernal means fresh or new like the spring).
- The **September equinox is called the autumnal equinox**, because it marks the first day of fall (autumn).
- When the Northern Hemisphere starts to tilt toward the sun in spring, the Southern Hemisphere starts to tilt away from the sun, signaling the start of fall.
- Thus, in the **Southern Hemisphere, the March equinox is called the autumnal equinox**, and the September equinox is called the vernal equinox.
- While the March equinox brings later sunrises, earlier sunsets, chillier winds and dry, falling leaves in the Southern Hemisphere, while the reverse happens in the Northern Hemisphere.

2. Reverse Flipping: It is a **term used to describe the trend of overseas start-ups shifting their domicile to India and listing on Indian stock exchanges.**

- The **general motivation for a reverse flip is the increased certainty of an exit at a higher valuation in India.** This trend has been gaining traction in recent years, as start-ups look to capitalise on India's large and growing economy, access to deeper pools of venture capital, favourable tax regimes, better intellectual property protection, a young and educated population, and favourable government policies.
- The **Economic Survey 2022-23 recognised the concept of reverse flipping and proposed ways to accelerate the process, such as simplifying the processes for tax vacations, taxation of ESOPs, capital movements, decreasing tax layers, and the like.**

Flipping: Flipping is when an Indian company transforms into a 100% subsidiary of a foreign entity after it has moved its headquarters overseas, including a transfer of its intellectual property (IP) and others.

- It **effectively transforms an Indian startup (company) into a 100% subsidiary of a foreign entity**, with the founders and investors retaining the same ownership via the foreign entity, having swapped all shares.
- **Brain drain of entrepreneurial talent from India.** It results in value creation in foreign jurisdictions rather than in India. It also results in the loss of Intellectual Property and Tax Revenue for the country.

3. State of Global Climate Report 2023: It is an **annual report published by the World Meteorological Organisation (WMO).** Many experts and partners contribute to the report, including UN organizations, National Meteorological and Hydrological Services (NMHSs), and Global Data and Analysis Centers, as well as Regional Climate Centres, the World Climate Research Programme (WCRP), the Global Atmosphere Watch (GAW), the Global Cryosphere Watch and the Copernicus Climate Change Service operated by ECMWF.

Highlights of the 2023 Report:

- **2023 was the hottest year on record**, with the global average near-surface temperature at 1.45 °Celsius (with a margin of uncertainty of ± 0.12 °C) above the pre-industrial baseline. It **was the warmest ten-year period on record.**

- On an average day in 2023, **nearly one third of the global ocean was gripped by a marine heatwave, harming vital ecosystems and food systems.** Towards the end of 2023, over 90% of the ocean had experienced heatwave conditions at some point during the year.
- The global set of reference glaciers suffered the largest loss of ice on record (since 1950), driven by extreme melt in both western North America and Europe, according to preliminary data.
- In **2023, renewable capacity additions increased by almost 50% from 2022, for a total of 510 gigawatts (GW), the highest rate observed in the past two decades.**

21 MARCH

- 1. World Happiness Report: Finland has once again claimed the title of the world's happiest country for the seventh consecutive year,** according to the annual UN-sponsored World Happiness Report. The annual World Happiness Report is a partnership of Gallup, the Oxford Wellbeing Research Centre, the UN Sustainable Development Solutions Network (SDSN), and the World Happiness Report's Editorial Board. It is based on global survey data from people based on people's own assessments of their happiness, as well as economic and social data. It considers six key factors: social support, income, health, freedom, generosity, and the absence of corruption. It assigns a happiness score based on an average of data over a three-year period.
 - **The other top 10 countries are Denmark, Iceland, Sweden, Israel, Netherlands, Norway, Luxembourg, Switzerland, and Australia.**
 - Out of the 143 countries surveyed, **Afghanistan remained at the bottom of the list.**
 - The report underscores a change wherein the happiest countries no longer include any of the world's most populous nations. **Only the Netherlands and Australia, both with populations exceeding 15 million, are present in the top 10.**
 - **India is ranked 126th on the list,** the same as last year, in the happiness index.
 - **Older age is associated with higher life satisfaction in India.** The report said that older Indian men, particularly those in higher age brackets, presently married and those with an education, tend to report greater life satisfaction

compared to their counterparts. However, older women in India report lower life satisfaction than older men.

- 2. National Internet Exchange of India (NIXI):** It was established in 2003 as a not-for-profit organization under the Companies Act 2013. It was set up to extend the use of Internet Service Protocols (ISPs) for the purpose of routing domestic traffic within the country instead of taking it all the way abroad, thereby resulting in a better quality of service (reduced latency) and reduced bandwidth charges for ISPs by saving on international bandwidth.

It is tasked to increase Internet penetration and adoption in India by facilitating the various infrastructure aspects to enable the Internet ecosystem to be managed and used by the masses. .IN is India's Country Code Top Level Domain (ccTLD). The Government of India delegated the operations of INRegistry to NIXI in 2004. The INRegistry operates and manages India's .IN ccTLD. Another activity being carried out by NIXI is that of National Internet Registry (NIR). The NIR is known as the Indian Registry for Internet Names and Numbers (IRINN). It offers IXPs towards building Internet Exchange Points.

- 3. World Forest Day: World Forest Day, also known as International Day of Forests, is celebrated on March 21 each year.** It is celebrated every year to remind people of the significance of forests and trees in our lives. Countries are encouraged to take part in regional, global, and local drives to set up a scope of forest and tree-related campaigns, like planting campaigns. The **Food and Agriculture Organization of the United Nations (FAO) and the United Nations Forum on Forests are the coordinators of the International Day of Forests.**

In 1971, the General Assembly of the European Confederation of Agriculture proposed that we should celebrate a day dedicated to forests. **March 21 was chosen as World Forestry Day by the United Nations as it coincides with Vernal Equinox and Autumn Equinox in northern and southern hemispheres. The theme for this year is - Forests and Innovation: New Solutions for a Better World.**

- 4. Project GROOT:** The project GROOT stands for **Generalist Robot 00 Technology.** It is a multimodal AI system that acts as the mind for humanoid robots,

allowing them to learn new skills and interact with the real world. Robots built on this platform are designed to understand natural language and emulate movements by observing human actions, such as instantly learning coordination, dexterity, and other skills. **The project aims to empower humanoid robots with human-like understanding and movement using Artificial Intelligence (AI).** The humanoids learn from human demonstrations with imitation learning and from the robotics platform NVIDIA Isaac Lab for reinforcement learning.

22 MARCH

1. Enforcement Directorate (ED): It is a **multi-disciplinary organization** mandated with the investigation of offence of **money laundering and violations of foreign exchange laws.**

- It was **established in 1956 as an 'Enforcement Unit'** under the Department of Economic Affairs. Later, in 1957, this **unit was renamed the 'Enforcement Directorate'**.
- It is under the **administrative control of the Department of Revenue (under the Ministry of Finance)** for operational purposes.
- ED is responsible for enforcement of the **Prevention of Money Laundering Act, 2002 (PMLA), Foreign Exchange Management Act, 1999 (FEMA), and Fugitive Economic Offenders Act, 2018 (FEOA).**
- **ED has the power to attach the assets of the culprits found guilty of the violation of FEMA.** It has also been empowered to undertake, search, seizure, arrest, prosecution action, and survey, etc. against the offences committed under PMLA.
- **The ED Director is appointed by the central government on the recommendation of a committee:** chaired by the Central Vigilance Commissioner and members comprising of Vigilance Commissioners, Home Secretary, Secretary DOPT and Revenue Secretary.

2. MeitY Startup Hub: Ministry of Electronics & IT Startup Hub is empowering innovation, driving growth and forging success within the vast landscape of Startup Mahakumbh 2024.

- It is **established as an Independent Business Division (IBD) under the aegis of Digital India Corporation (DIC)** under the Ministry of

Electronics and Information Technology (MeitY), Government of India.

- It is **aimed at fostering entrepreneurship and innovation in the technology sector.** It supports startups, incubators and Centers of Excellence (CoEs) through various programs and initiatives to drive digital transformation and promote India's leadership in emerging technologies.
- It **has a mission to build a conducive innovation and start-up ecosystem by bringing together various technology innovation stakeholders** and paving the way toward a strong economy built on the twin engines of innovation and technological advancement.
- It **acts as a national coordination, facilitation and monitoring center** that will integrate all the incubation centers, start-ups, and innovation-related activities of MeitY.

3. Order of the Druk Gyalpo: Recently, the **Prime Minister of India received Bhutan's highest civilian award, the 'Order of the Druk Gyalpo',** during his two-day State visit to the neighbouring nation.

- It **stands as Bhutan's most esteemed civilian accolade, reserved for individuals who have demonstrated exceptional contributions to society,** embodying values of service, integrity and leadership.
- As per ranking and precedence established, the **Order of the Druk Gyalpo was instituted as the decoration for lifetime achievement and is the pinnacle of the honour system in Bhutan,** taking precedence over all orders, decorations and medals.
- The award has been conferred to Prime Minister of India in recognition of outstanding contribution to the growth of India-Bhutan relations.
- The present Prime Minister of India became the first foreign head of government to receive Bhutan's highest civilian honour.

23 MARCH

1. Krutrim AI: It is envisioned to be personalised assistant, which can simplify personal and professional life by getting a variety of tasks done for you. It **hopes to bridge the gap between conventional AI and the specific needs based on Indian languages and culture.**

- It **uses Natural Language Processing (NLP)** — a

component of AI — to understand the nuances of human language, including colloquialisms and cultural contexts.

- Machine Learning (ML) algorithms enable it to learn from vast data sets and improve its responses over time. **Moreover, Deep Learning, a sophisticated branch of ML, helps it recognise patterns and analyse complex data.**
- **One of the distinguishing features of Krutrim AI is that it has the ability to understand the intent of the user.** While most AI models rely on keyword matching and statistical probabilities, **Krutrim AI reportedly dives deeper to understand the user's request.**
- It can help with a variety of creative and knowledge retrieval tasks. One can write an email, seek information on topics of interest, learn new skills, plan travel or learn a new recipe, and more.

2. World Tuberculosis (TB) Day: World Tuberculosis (TB) Day is celebrated on March 24 annually to spread awareness around the deadly disease.

- It is **celebrated to raise awareness around the disease**, increase efforts to eradicate the disease, and mobilise support for those affected by TB.
- **March 24, 1882** is considered a significant date in the battle against tuberculosis as it is on this day that **Dr Robert Koch discovered the bacteria that causes TB.**
- It was not before the year 1982, on the centenary of **Dr. Koch's discovery that the International Union Against Tuberculosis and Lung Disease (IUATLD) proposed observing March 24 as World TB Day** to raise awareness about TB and its global impact.
- The **first World TB Day was officially observed in 1983**, and since then, it has become an annual event. **Theme of World Tuberculosis day 2024: "Yes! We can end TB".**

3. Project ANAGRANINF: The **primary objective of this project is to develop a novel lead compound, particularly an antibiotic, adept at inhibiting the FabI enzyme** and combatting critical gram-negative pathogens.

- **Gram-negative bacteria:** They have a **much thinner peptidoglycan cell wall, but in addition they have an outer membrane** containing

lipopolysaccharides surrounding the cell and are consequently termed diderms.

These bacteria have built-in abilities to find new ways to be resistant and can pass along genetic materials that allow other bacteria to become drug-resistant as well. It causes infections including pneumonia, bloodstream infections, wound or surgical site infections, and meningitis in healthcare settings. They are resistant to multiple drugs and are increasingly resistant to most available antibiotics.

- **Examples:** Bacteria include enterobacter species, salmonella species and pseudomonas species.

4. Technology Development Board: It is a statutory body constituted under the Technology Development Board Act, 1995.

- It aims to **promote the development and commercialization of indigenous technology** and the adaptation of imported technology for wider application.
- **The board consists of 11 Board members.** It provides equity capital or loans to industrial concerns and financial assistance to research and development institutions.
- **The Fund has been receiving grants from the Government of India** out of the cess collections from the industrial concerns under the **provisions of the Research and Development Cess Act, 1986, as amended in 1995.**

25 MARCH

1. Netravati River: The principal bench of the National Green Tribunal (NGT) in New Delhi has initiated action on the Netravati Waterfront Promenade Development Project in Mangaluru. It **rises between Kudremukh and Ballalayan Durga in the Dakshina Kannada district of Karnataka.**

- It **flows generally in a North-South direction up to Gohattu**, where it takes a turn towards the West and there after flows in East-West direction up to its out fall into the Arabian Sea near Mangalore. **The Kumaradhara, a major left-bank tributary joins near the village Uppinangadi.**
- The climate of the basin is characterized by heavy rainfall, high humidity and oppressive weather in the hot season.

2. Gulaal Gota: It is a small ball made of lac, filled with dry gulaal. They are **made by Muslim lac makers, called Manihaars, only in Jaipur.**

- The tradition of using Gulaal Gota goes back to 400 years when the erstwhile Jaipur royal family members would play Holi with them.
- The **making of Gulaal Gotas involves first boiling the lac in water to make it flexible.** Lac is a resinous substance that is secreted by certain insects. It is **also used to make bangles. After shaping the lac, colour is added to it.** At first red, yellow and green are added as other colours can be obtained through their combinations.
- After the processing is done, artisans heat the lac. It is then **blown into a spherical shape with the help of a blower called "phunkni". Then, gulaal is filled in the balls before they are sealed with lac.**
- The lac is brought from Chhattisgarh and Jharkhand and the female scale insect is one of the sources of lac. The lac insects also yield resin, lac dye and lac wax.

3. Earth Hour: It is a **global grassroots movement uniting people to take action on environmental issues and protect the planet.** It is organized by the World Wildlife Fund (WWF).

- It **started in Sydney, Australia, in 2007 as a symbolic lights-out event** and has since grown into a global movement involving millions of people in over 190 countries and territories. It takes place towards the end of March every year.
- **"Earth Hour" encourages people to switch off all lights for an hour, from 8:30 p.m. to 9:30 p.m. local time, to promote awareness of climate change challenges and energy conservation.**
- Governments and companies also participate by turning off non-essential lights in their buildings, monuments and landmarks to raise awareness about the impact of energy consumption on our planet.

4. World Wildlife Fund (WWF): It is an **international non-governmental organization (NGO) founded in 1961 in Morges, Switzerland,** to protect endangered species of wildlife and preserve natural habitats.

Mission: To **stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.** WWF works with a broad spectrum of partners, including governments, industry, and local communities, to find solutions to the challenges that face our natural world.

26 MARCH

1. Smart Meter National Programme (SMNP): It is an initiative by the government of India to promote the use of smart meters across the country.

- The **aim of the SMNP is to improve the billing and collection efficiencies of distribution companies (DISCOMs) operating in the country.** It aims to replace 25 crore conventional meters with smart meters in India.
- The scheme is being **implemented by Energy Efficiency Services Limited (EESL).**
- EESL is a joint venture of four National Public Sector Enterprises: **NTPC Limited, PFC, REC, and POWERGRID, and was set up under the Ministry of Power.**
- **This roll-out is under the Build-Own-Operate-Transfer (BOOT) model,** wherein EESL will undertake all the capital and operational expenditure with zero upfront investment from states and utilities.
- The smart meters are installed as per guidelines issued by the Central Electricity Authority (CEA).
- Smart meters are connected through a web-based monitoring system, which will help reduce commercial losses of utilities, enhance revenues, and serve as an important tool in power sector reforms.

2. Captive Elephant (Transfer or Transport) Rules, 2024: It lays down the procedure to be followed for the transfer of captive elephants within a State or between two States. The notification authorises the chief wildlife warden of States and UTs to permit or reject the transfer of captive elephants.

- The **CWW shall permit the inter and intra-State transfers** if the owner of the elephant is no longer in a position to maintain it or if the animal will have a better upkeep than in the present circumstances.
- The transfer of captive elephants won't be

permissible unless the genetic profile of the animal has been **entered in the electronic monitoring application of the MoEFCC (Ministry of Environment, Forest and Climate Change).**

- The application for transfer of captive elephants should be made to the deputy conservator of forests (DCF), having jurisdiction over the area where the elephant is registered.
- **The DCF will conduct an inquiry and physical verification of the facility where the elephant is presently housed,** and also the facility where the elephant is proposed to be housed and obtain a
- It aims to provide an 'end-to-end' digital journey to all policyholders like from buying insurance policies to renewals to claim settlement to portability to grievance redressal.
- It serves as a one-stop solution for all insurance stakeholders, including customers, insurers, intermediaries and agents, thereby, promoting transparency, efficiency and collaboration across the entire insurance value chain.
- It will be a **unified platform, which will be integrated with various govt databases,** insurers, intermediaries, insurance repositories, etc., for fetching customer details, providing product information, and buying and servicing Insurance policies.

Bima Sugam aims to eliminate the paperwork as you can simply have your policy in an electronic format. Customers can view all their policies — life, health and non-life insurance — in one single application or window under Bima Sugam.

27 MARCH

1. Monuments of National Importance (MNI): The Ancient Monuments and Archaeological Sites and Remains Act (AMASR Act), 1958 (amended in 2010), provides for the **declaration and conservation of ancient and historical monuments and archaeological sites, and remains of national importance.**

- **Uttar Pradesh (745 monuments/sites) have the highest number.**
- After considering the views/objections received within the stipulated period, the **Central Government may declare the ancient monument**

certificate of a veterinary practitioner, and then forward the details to the CWW, who within seven days will accept or reject the transfer.

3. Bima Sugam: Recently, the Insurance Regulatory and Development Authority of India (IRDAI) has approved the setting up of Bima Sugam.

- It is like **an e-commerce platform where insurance companies can sell their products.** It onboards all the companies that offer life and non-life insurance products under one roof
- **to be of national importance by publishing a notification in the official gazette.**
- Once a monument or a site is declared to be MNI, their protection and upkeep is the responsibility of the Archaeological Survey of India, under the Ministry of Culture.
- The **One-hundred-meter radius of the monument is then considered a 'prohibited area' where there is a ban on construction activities.** Further 200 meters (i.e., 100+200 meters) are considered a 'regulated area' where there are regulations on construction.
- **The ASI also has the power to delist monuments it deems to "have ceased to be of national importance" under Section 35 of the Act.** Once a monument is delisted, the ASI becomes no longer responsible for protecting these monuments.

2. Armed Forces (Special Powers) Act (AFSPA): It is a **law enacted by the Parliament in 1958 which gives the armed forces special powers and immunity to maintain public order in "disturbed areas".** It can be applied only after an area has been declared "disturbed" under section 2 of the Act.

- An area can be considered to be disturbed due to differences or disputes among different religious, racial, language or regional groups or castes or communities.
- The Central Government or the Governor of the State or administrator of the Union Territory, can declare the whole or part of the State or Union Territory as a disturbed area.
- It can be invoked in places **where "the use of armed forces in aid of the civil power is necessary".**
The '**special powers**' of armed forces under AFSPA are:
 - They have the authority to prohibit a gathering

of five or more persons in an area, can use force or even open fire after giving due warning if they feel a person is in contravention of the law.

- If **reasonable suspicion exists, the army can also arrest a person without a warrant, enter or search a premises without a warrant**, and ban the possession of firearms.
- Any person arrested or taken into custody may be handed over to the officer in charge of the nearest police station along with a report detailing the circumstances that led to the arrest.
- These armed forces are immune from prosecution unless the Union Government provides sanction to the prosecuting agencies.
- Apart from Nagaland, the **AFSPA is currently in force in Jammu and Kashmir, Assam, and Manipur except Imphal, and Arunachal Pradesh**.

3. Krishi Integrated Command and Control Centre: It is a tech-based solution involving multiple IT applications and platforms, housed in the **Ministry of Agriculture & Farmers' Welfare**.

- It will enable comprehensive monitoring of the farm sector by making available at one place geospatial information received from multiple sources, including **remote sensing; plot-level data received through soil survey and weather data from the India Meteorological Department (IMD) etc.**
- It uses state of the art technologies such as **artificial intelligence, remote sensing, and Geographic Information Systems (GIS) to collect and process large amounts of granular data** — on temperatures, rainfall, wind speed, crop yields and production estimations — and presents it in graphical format.
- It provides information on crop yields, production, drought situation, cropping patterns (geographic region-wise and year-wise) in map, timeline and drill-down views.
- It uses platforms including the **Krishi Decision Support System (DSS)** to collect micro-level data, process it, and present the macro picture.

28 MARCH

1. Solar and Heliospheric Observatory (SOHO): It is a project of international collaboration between the **European Space Agency (ESA) and the U.S. National**

Aeronautics and Space Administration (NASA). It was launched in December 1995, SOHO was designed to study the Sun.

In order to provide continuous observations, it was **maneuvered to orbit the first Lagrangian point (L1), a point some 1.5 million km from Earth toward the Sun** where the gravitational attraction of Earth and the Sun, combine in such a way that a small body remains approximately at rest relative to both. It **carries 12 scientific instruments to study the solar atmosphere, helioseismology and the solar wind**.

Though its mission was scheduled to run until only 1998, it has continued collecting data, adding to scientists' understanding of our closest star, and making many new discoveries, including thousands of comets. It is the longest-lived Sun-watching satellite to date.

2. Investment Facilitation for Development: One of the significant developments at the 13th Ministerial Conference (MC13) of the World Trade Organization (WTO) in Abu Dhabi was the non-adoption of the agreement on Investment Facilitation for Development (IFD).

It is a **joint Initiative launched at the 11th WTO Ministerial Conference (MC11) in December 2017 on a plurilateral basis by 70 countries**. This was done through a process known as the Joint Statement Initiative.

Aim: This agreement aims to create legally binding provisions to facilitate investment flows. It also aims to develop predictable, transparent and open investment rules and it is now in a formal negotiation phase.

Objective: A core objective of the framework is to **facilitate greater participation by developing and least-developed WTO Members in global investment flows**. The IFD agreement was finalised in November 2023 and at present around 120 of 166 WTO member countries (more than 70% of the membership) back this agreement.

India is not a part of this initiative.

3. Mushk budiji Rice: Scientists reported that altitude and temperature play an important role in the development of mushk budiji aroma. It is **short, bold aromatic rice grown in the higher reaches of Kashmir valley**. It possesses a harmonious blend of taste, aroma and rich organoleptic properties. The

consumption of aromatic rice in Kashmir has now been limited to special occasions, marriages and festivals. It has **received a Geographical Indication (GI) tag.**

Scientists conduct a study of selected locations on the flavour profile of mushk budiji using gas chromatography-mass spectroscopy (GC-MS) and an 'electronic nose.'" Based on these studies, the **scientists identified 35 volatile organic compounds (VOCs) in mushk budiji rice samples. Acetyl-1-pyrroline (2- AP) is a known aromatic compound found in some varieties** – but it was present only in mushk budiji samples collected from higher altitudes. Chromatography-mass spectroscopy is an analytical method used to reveal the presence of volatile compounds present in organic mixtures extracted from geological, environmental and biological samples.

30 MARCH

1. UNESCO Global Geoparks Network: These are single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development. **The UNESCO Global Geopark designation was created in 2015 and recognizes "geological heritage of international significance"**. These comprise a number of geological heritage sites of special scientific importance, rarity or beauty. **The establishment of a UNESCO Global Geopark is a bottom-up process involving a strong local multiple partnership with long-term public and political support. It is not a formal legislative designation, though the defining geological heritage sites within a UNESCO Global Geopark must be protected under indigenous, local, regional or national legislation as appropriate.** This status does not imply restrictions on any economic activity inside a UNESCO Global Geopark where that activity complies with indigenous, local, regional and/or national legislation.

Recognition Period: A UNESCO Global Geopark is given this designation for a period of four years after which the functioning of the site re-examined during a revalidation process.

Restrictions: The selling or destruction of the geological value of a UNESCO Global Geopark or of material either from within the Geopark or from

anywhere else in the world is not permitted.

Global Geoparks Network: It is a non-profit International Association officially established in 2014 subject to French legislation. **It is the official partner of UNESCO for the operation of the UNESCO Global Geoparks.**

2. Eco-Niwas Samhita: The Eco-Niwas Samhita (ENS) introduced the **Residential Envelope Transmittance Value (RETV), a metric measuring heat transfer through a building's envelope.** It is a **Residential Energy Conservation Building code developed by Bureau of Energy Efficiency (BEE).** The code sets standards to limit heat gain and loss and ensure adequate natural ventilation and day lighting potential. **It was launched in two parts.** ENS 2018 (Part 1) sets minimum standards for building envelope designs for energy-efficient residential buildings. **ENS Part 2 launched by the Bureau as ENS 2021 focuses on the building's code compliance and electromechanical systems.** It also addresses other aspects such as, Energy Efficiency in Electro-Mechanical Equipment for Building Operation, Renewable Energy Generation, Embodied Energy of Walling Materials and Structural Systems.

3. C-Vigil app: It is a **mobile application developed by the Election Commission of India (ECI) to enable citizens to report violations of the Model Code of Conduct (MCC) during elections.** It is user- friendly and easy to operate application, which connects vigilant citizens with the District Control Room, Returning Officer and Flying Squads Teams. By using this app, the **citizens can immediately report on incidents of political misconduct within minutes and without having to rush to the office of the returning officer.** As soon as the complaint is sent on the cVigil app, the complainant will receive a unique ID through which the person will be able to track the complaint on their mobile. **Users capture audios, photos or videos in real-time, and a "100-minute" countdown for time-bound response to complaints is ensured.** The app automatically enables a geo-tagging feature as soon as the user switches on their camera in the cVIGIL to report a violation. This **means that flying squads could know the precise location of a reported violation and the image captured by citizens could be used as evidence in the court of law.** It uses **GPS to track the location of the violation.** It allows users to capture the live incidents only. It has a feature to report the case of MCC violation anonymously.

PLACES IN NEWS

1. Ross Sea:

- It is a **giant bay just 320 km from the South Pole**.
- A large portion of the sea is covered by the Ross Ice Shelf, the largest ice shelf in Antarctica.
- The sea is remote and positioned south and slightly east of New Zealand.
- It is the **first protected area in Antarctica**, and home to most of the world's penguins and many species of whale.
- It is **strongly influenced by the coastal East Wind Drift** that sets up a vast clockwise gyre accompanied by deep water upwelling.



2. Nainativu Island:

- It is **located in the Palk Strait**, the stretch of sea that separates Sri Lanka from southern India.
- It's close to the famous **island of Delft** (also known as Neduntheevu).
- This tiny island is fairly close to the northern Sri Lankan city of Jaffna.
- It is an important pilgrimage place for both **Hindus and Buddhists**.
- **Historical significance:** Historians note the island is mentioned in the ancient **Tamil Sangam literature** where it was mentioned as **Manipallavam**
- **Nagapooshani Amman Kovil**, a historic Hindu temple dedicated to the principal goddess of Tamil Hindus, Amman is located in this Island.
- She is identified with the **famous Tamil deity Meenakshi from Madurai** from mainland India.

- The **Mahavamsa**, which is literally the '**Great Chronicle**', was composed by the Monk Mahanama in the 6th century A.D.
- According to the chronicle, the **Buddha came to this Island**, literally meaning '**Serpent Island**', on his second visit to Sri Lanka, five years after attaining enlightenment.

3. Burkina Faso:

- It is a landlocked country in **western Africa** and has territories in both the Eastern and Western Hemispheres.
- **Borders:** It shares its borders with six other nations: **Mali** to the north and west, **Niger** to the east, and **Benin** to the southeast, while to the south it touches **Togo, Ghana, and Ivory Coast**.
- **Capital:** Ouagadougou
- **Geography:**
 - It is predominantly characterized by **savannahs, plateaus, and low mountains in the southwest**.
 - The **northern region**, known as the **Sahel**, is arid and desert-like.



4. Amrabad Tiger Reserve (ATR)

- This **Tiger Reserve (ATR)** is **one of the largest tiger reserves in India**.
- Amrabad is the second-largest Tiger Reserve in terms of core area.
- It is also the **sixth largest in terms of total area among 51 Tiger Reserves in India**.

- It is located in the **Nagarkurnool and Nalgonda districts in the southern part of Telangana.**
- Amrabad Tiger Reserve Forest is home to the largest number of Tigers in Telangana State.
- The hilly terrain of this Tiger Reserve, with deep valleys and gorges, forms the catchment of the Krishna River

5. Jim Corbett National Park:

- Jim Corbett national park is located in **Nainital district of Uttarakhand.**
- **Flora:**
 - Sal, Semal, Kharpat, Sissoo, Khair, Dhak, Khingan, Bakli, Bel, Ber, Bamboo, Khingam, Jamun, Kanju, Rohini and Pula.
 - **Sal, Khair and Sissoo** are the most visible trees found in Corbett.
- **Fauna:**
 - Tiger, Leopard, Elephant, Chital Deer, Sambar Deer, Hogg Deer, Barking Deer, Wild Boar, Langur, Wild pig, Rhesus Monkey, Jackal, Rabbit, Yellow Throated Martin, Otters.
 - Reptiles such as Crocodile, Gharial, King Cobra, Common Krait, Cobra, Russel Viper, Rock Python, and Monitor Lizard are also found.
- **Rivers Associated:**
 - The eastern periphery of Corbett National Park is entirely fed by the **Kosi River.**
 - The **Ramganga River** (West) along with its significant tributaries Sonanadi, Palain and Mandal forms the prominent hydrological resource for the Corbett.
- **Key Facts:**
 - It is **India's oldest national park** (1935).
 - It was named Hailey National Park after its **founder Sir Malcolm Hailey.**
 - In 1956, in honour of Jim Corbett, who took the initiative for wildlife preservation in India, the Indian Government renamed it as Corbett National Park.
 - It has the **highest population of tigers in India.**

6. MEXICO:

- As per reports, the **Mexico City is running toward Day Zero scenario.**

- In Day Zero scenario, **water is only available for vital services.**
- **Political features:** Located in southern North America, Shares border with United States, Belize, and Guatemala
- **Surrounded by water bodies:** the Caribbean Sea and the Gulf of Mexico, and Pacific Ocean
- **Geographical features:** It is a part of the circum-Pacific Ring of Fire, a region of active volcanism and frequent seismic activity.
- **Highest Peak:** Volcán Pico de Orizaba
- **Major Rivers:** Rio Grande river and Colorado river
Desert: Sonoran Desert



7. Indonesia:

- **RBI and Bank Indonesia signed MoU to promote use of local currencies in bilateral transactions.**
- **Political Boundaries:** A Southeast Asian country, located on equator, and largest archipelagic country.
- **Land Borders:** Malaysia, Papua New Guinea, and East Timor
Maritime Borders: Singapore, Philippines, Australia, Vietnam, Thailand and India.
- **Water Bodies:** South China Sea and Pacific Ocean (North), and Indian Ocean (South).

Geographical Features:

- **Five main islands:** Sumatra, Java, Kalimantan, Sulawesi and Papua.
- **Major Rivers:** Mahakam, Barito
- **Highest Peak:** Puncak Jaya
- It lies on **Pacific Ring of Fire.**



8. Corbett Tiger Reserve:

- Supreme Court has directed to constitute a committee to assess the damage caused in the Corbett Tiger Reserve due to Tiger Safaris.

About Corbett Tiger Reserve

- Located on foothills of Himalayas in Uttarakhand and spread over Bhabar and lower Shivalik region.
- **First national park to be established in mainland Asia.**
- Declared as an 'Important Bird Area' (IBA) by **Birdlife International.**
- **Rivers flowing through it:** Ramganga, Pallaen and Sonanadi.
- Local grasslands known as Chaur.
- **Vegetation type:** Tropical dry and moist deciduous forest.
- **Fauna:** Tiger (highest tiger density), elephant, leopard, sambar, hog deer etc

9. Sabroom Land Port (SLP):

- PM inaugurated Sabroom Landport in Tripura located along India-Bangladesh international border.

About SLP:

- It is **connected to Chittagong port of Bangladesh through Maitree Bridge on River Feni.**
- It will facilitate movement of passengers and cargo between India and Bangladesh.
- **Land Ports:** These are **areas on international border including portions of national highways, State highways, etc.,** notified as land customs

station or immigration check post, with facilities for clearance and transport of passengers and goods across the borders. **Currently, there are 11 Land Ports operational in India (excluding SLP).**

10. Gulf Of Tonkin:

- China has delineated the baseline in the Gulf of Tonkin, known in Chinese as Beibu Gulf.
- **Baselines, under UNCLOS 1982, are used to determine limits to territorial waters and Exclusive Economic Zones.**
- Gulf of Tonkin is located off the coast of Northern Vietnam and Southern China.
- Until now both countries have maintained friendlier relations in this Gulf despite their overlapping claims in South China Sea.
- **The Red River (which flows across China and Vietnam) empties into this gulf.**



11. Belarus (Capital: Minsk)

- Foreign Minister of Belarus paid official visit to India.
- **Political features:**
 - Landlocked country of Eastern Europe.
 - **Bordering countries:** Lithuania and Latvia (northwest), Russia (north and east), Ukraine (south), and Poland (west).
- **Geographical features:** Much of the country consists of flat lowlands separated by low level-topped hills and uplands. Topography was largely shaped by glaciation during the Pleistocene Epoch.
- **Major Rivers:** Pripyet, Dnieper, , and Neman
- **Highest Point:** Dzyarzhynskaya Hill



12. Simlipal Tiger Reserve (STR): Odisha police traces illegal poppy farms deep within STR.

About STR:

- It is a **National Park and Tiger Reserve located within Mayurbhanj District, Odisha.**
- It comes under **Deccan Peninsular Bio-geographic Zone, Chhotanagpur Province and Mahanadian Region.**
- **Flora:** Moist mixed deciduous forest, Tropical semi-evergreen forest, sporadic patches of dry deciduous forests and grasslands.
- **Fauna:** Tiger, Leopard, King Cobra, Common Cobra etc.
- **UNESCO added it to its list of Biosphere Reserves in 2009.**

13. Papikonda National Park (PNP):

- Located in northern Eastern Ghats, is spread over the Papi Hills and straddles the Godavari river.
- It is an **Important Bird and Biodiversity Area.**
- A unique dwarf breed of goat known locally as the “**kanchu mekha**” originates in this region.
- **Forest type:** Dry Mixed Teak Forests, dry mixed deciduous forests, and moist mixed deciduous forests
- **Fauna:** Gaur, Tiger, Leopard, Hyena, sambar, barking deer, Black-bellied Tern etc.

14. Bulgaria:

Recently, the Indian navy rescued hijacked Bulgarian ship “Ruen” and its crew.

- **Political features:**
 - Located in **Balkan Peninsula of Southeastern Europe** and a member of European Union.

- **Bordering Countries:** Turkey and Greece (South), North Macedonia and Serbia (West), Romania (North).
- **Surrounding water body:** Black Sea.
- **Geographical features:**
 - **Major Rivers:** Danube, Maritsa, Struma, Iskar
 - **Mountain Ranges:** Balkan Mountains, Rila, Pirin, Rhodopes
 - **Highest Point:** Mount Musala.

15. Papua New Guinea (Capital: Port Moresby)

- Recently, two warring groups **Yopo Alliance & Palinau Alliance** signed ceasefire agreement in Papua New Guinea.
- **Political Boundaries**
 - Island country in south-western Pacific Ocean.
 - Encompassing eastern half of **New Guinea (world’s second largest island), Bismarck Archipelago, Bougainville and Buka, etc.**
 - Stretches from just south of Equator to Torres Strait.
 - **Neighbours:** Indonesia (west), Australia (south) and Solomon Islands (south-east).
- **Geographical Features**
 - Situated along a Pacific Ring of Fire.
 - **Main rivers:** Sepik and Fly
 - **Highest peak:** Mount Wilhelm

16. Lake Chad: Lake Chad is located in the Sahel, the vast semi-arid region south of the Sahara desert.

- It is bordered by 4 countries - **Chad, Cameroon, Niger and Nigeria.**
- **Source of the Lake:** It is fed mainly by the **Chari River** through the Lagone tributary.
- The Lagone tributary used to provide 90 % of its water.
- **Significance of the Lake:** The Lake is vital for indigenous, pastoral and farming communities in these countries.
- The lake has been supporting drinking water, irrigation, fishing, livestock and economic activity for over 30 million people in the region.
- The **Lake Chad basin in west and central Africa covers 8% of the African continent** and is home to 42 million people.



18. Malaysia (Capital: Kuala Lumpur): External Affairs Minister paid an official visit to Malaysia.

Political features:

- Lies in Southeast Asia. **Land boundaries:** Thailand (West), Brunei (North), Singapore and Indonesia (South).
- **Maritime borders:** Vietnam and Philippines.
- **Surrounding Water bodies:** Pacific Ocean, Indian Ocean, South China Sea

Geographical features:

- Occupies parts of Malay Peninsula and Borneo Island.
- Separated by South China Sea into two regions – **Peninsular Malaysia and East Malaysia.**
- Strait of Malacca lies between Sumatra and Peninsular Malaysia.
- **Major rivers:** Rajang (longest), Kinabatangan, Pahang
- **Highest Peak:** Mount Kinabalu

17. Shinkun La Pass:

- Border Road Organisation has connected strategically important road from **Manali (Himachal Pradesh) to Leh (Ladakh) through Darcha and Nimmu on Kargil–Leh Highway.**
- Road is not only shorter, but crosses only one pass— **Shinkun La (16,558 feet).**
- Shinkun La Pass connects Lahaul and Spiti in Himachal Pradesh with Zaskar Valley in Kargil, Ladakh.
- This will result in road having all weather connectivity to Ladakh region.



EDUFACTS

1ST MARCH

1. Double Humped Camels: Double Humped Camels or Bactrian camels, have two humps on their backs where they store fat. They are **native to the harsh and arid regions of Central Asia**. They occupy habitats in Central Asia from Afghanistan to China, primarily up into the Mongolian steppes and the Gobi desert. **A small population of Bactrian camels exists in the Nubra Valley of Ladakh**. They are smaller and slenderer than the one-humped dromedary camels found in Africa and the Middle East. **They are omnivores but are primarily herbivores that constantly graze on grasses.**

2. ALTÉRRRA Fund = UAE President, at the COP28 climate summit in Dubai, announced the creation of a \$30 billion climate fund named ALTÉRRRA. The fund aims to attract \$250 billion in investment by the end of the decade, with \$25 billion allocated to climate strategies and \$5 billion to incentivize investment in the Global South. **The fund seeks to steer private markets towards climate investments, especially in emerging markets and developing economies.** The term "Alterra" typically refers to a Latin word that is often used in various contexts to **signify alteration, transformation, or variation.**

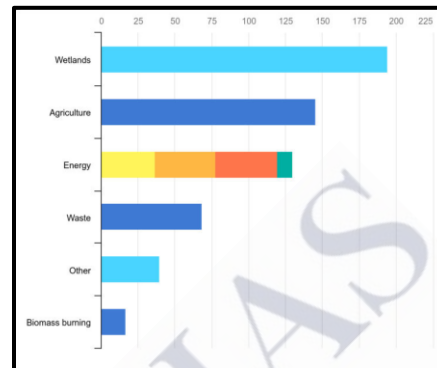
4 MARCH

1. 100% FDI in the Pharmaceutical sector is allowed under the automatic route for greenfield pharmaceuticals. 100% FDI in the pharmaceutical sector is allowed **in brownfield pharmaceuticals;** wherein **74% is allowed under the automatic route** and thereafter through the government approval route.

2. An analysis of the National Family Health Survey-5 (NFHS-5) data from last year shows that the prevalence of obesity was 31.7% in urban women and 19% in rural women. It was 28.6% among urban men and 18.8% among rural men.

5 MARCH

1. Major Sources Of Methane Emission



2. The largest source of anthropogenic methane emissions is agriculture, responsible for around one quarter of emissions, closely **followed by the energy sector,** which includes emissions from coal, oil, natural gas and biofuels

6 MARCH

1. Over 75% of India's prison population are undertrials while overcrowding in Indian prisons stands at 118%.

2. Tripura's traditional tribal attire 'risa' received the Geographical Indication (GI) tag recently.

7 MARCH

1. Star dunes - or pyramid dunes - are named after their distinctive shapes and reach hundreds of metres in height. They are **found in Africa, Asia and North America** and also have been spotted on Mars and on Saturn's large moon Titan. **Star dunes make up just under 10% of the dunes in Earth's deserts.** These are the tallest ones, surpassing other types such as crescent-shaped barchan dunes and straight and lengthy linear dunes.

2. Recently, the traditional Majuli masks and Majuli manuscript painting in Assam were given a Geographical Indication (GI) tag.

8 MARCH

1. **iDEX (Innovations for Defence Excellence):** iDEX is the operational framework of the Defence Innovation Organization (DIO), a **Section 8 (of Companies Act 2013) company**. DIO is formed jointly by **Hindustan Aeronautics Limited (HAL) and Bharat Electronics Limited (BEL)**.

2. **Election Commission of India notified a 'scheme for Internally Displaced Persons (IDPs) of Manipur to cast vote at relief camps'** in upcoming elections. It will facilitate voting facilities to the people who were displaced from their native places

11 MARCH

1. **Economic espionage (EE):** Act of deliberate acquisition of confidential information from domestic companies and government entities to benefit a foreign State. It can be **economic, industrial, or commercial**.

2. **Care economy consists of the paid and unpaid labour and services that support caregiving in all its forms.** It includes domestic chores, taking care of family members such as children and elderly or looking after individuals who are ill or have disabilities.

12 MARCH

1. As per the NCRB, the **victim count for workplace sexual harassment against women has increased from 402 in 2018 to 422 in 2022.** This is cause for concern because it is well established that women actually under-report crimes against them due to fear of repercussions, inadequate awareness, and societal biases.

13 MARCH

1. There are more than **8 lakh registered Cooperatives in the country**, with over 30 crore citizens connected to them.

2. Status of Indian Creator Economy:

- 80 million Creators and Knowledge Professionals in India.
- 150000 Professional content creators in India who are able to monetize their services effectively.
- Projected to double from \$250bn to \$480bn by

2027.

14 MARCH

1. 'Sea Defenders-2024' is a **maritime security exercise between the Indian Coast Guard (ICG) & United States Coast Guard (USCG)**, which recently culminated at Port Blair (Andaman and Nicobar Islands).

2. Insurance penetration is 4.2% and insurance density is \$91 in India which is very low as per Global Standards.

18 MARCH

1. Information Technology Act, 2000:

- **Section 67:** Punishes transmission of obscene materials in electronic form.
- **67A:** Punishment for publishing or transmitting material containing sexually explicit acts, etc. in electronic form.
- **Section 292 of the IPC:** Prohibits the circulation, distribution of obscene materials

19 MARCH

1. **Nana Jagannath Shankarseh became the first Indian to be nominated to Legislative Council of Bombay.** He is also remembered as the Founder of Bombay Association (1852).

2. **India has been ranked at 108 out of 193 countries** with a score of 0.437 in **Gender Inequality Index** released by UNDP.

20 MARCH

1. **Over 71000 candidates have lost their security deposit since the first Lok Sabha polls in 1951 for failing to secure a minimum of one-sixth of the total valid votes** polled in their respective constituencies, according to an analysis of the election commission data.

2. **Exercise Lamitiye** is a Joint Military Exercise between **Indian Army and Seychelles Defence Forces.**

21 MARCH

1. Indian patent office has granted >1 lakh patents between Mar, 2023 to Mar, 2024.

2. Report by a team of European scientists identified more than 16000 chemicals in plastics — from food packaging to toys to medical devices. Previously United Nations Environment Programme had identified around 13,000 plastic chemicals. Among these chemicals, more than a quarter are thought to be hazardous to human health and environment.

22 MARCH

1. 2.6% (7.7 million) of non-agricultural workforce were engaged in Gig economy. (2020-21) **Gig workforce is expected to expand to 23.5 million by 2029-30.**

2. Out of around 29 crore registrants, around 8 crore do not have ration cards and do not receive subsidized foodgrains under National Food Security Act (NFSA) 2013

26 MARCH

1. Nearly 4 billion tons of pesticides and 12 billion kg of agricultural plastics are used every year which has a harmful impact on health and environment.

2. In low and lower-middle-income countries around **70-80% of the jobs are water dependent.**

27 MARCH

1. Earth Hour was famously started as a lights-out event in Sydney, Australia in 2007. It is a global event observed annually on the last Saturday of March. It is organized by the World Wildlife Fund (WWF).

2. Lake Chad has decreased in size by 90% over 60 years

28 MARCH

1. India is at an inflexion point, as youth population, at 27% in 2021, is expected to decline to 23% by 2036.

2. Youth unemployment increased nearly threefold, from 5.7% in 2000 to 17.5% in 2019.

29 MARCH

1. Despite collecting a total of Rs 777.69 crore through Environment Protection Charge (EPC) and Environmental Compensation, Central Pollution Control Board (CPCB) has utilized only 20% of these funds.

2. **Gaming Market in India:** With 568 million users, India is officially the largest gaming market and accounts for every one in five online gamers globally. Indian gaming market is expected to reach \$6 Billion by 2028. Number of Indian gaming companies surged from 25 in 2015 to over 1400 in 2023.