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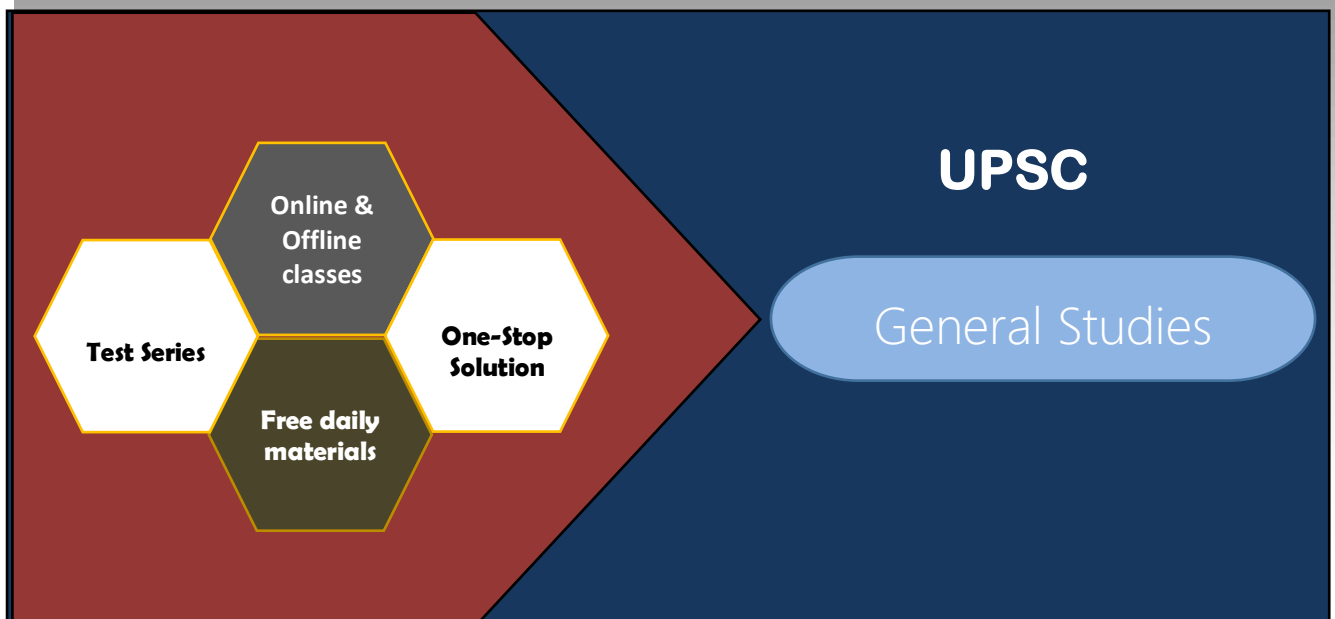
Monthly current affairs magazine

SHIKSHA

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**Articles of the day
THE HINDU & INDIAN EXPRESS**



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GS 1 : Heritage, culture ,Geography of the World and Society

1. Sangeet Natak Akademi organizes 'Shakti - Festival of Music and Dance'

Sangeet Natak Akademi is set to host 'Shakti, a festival of music and dance' as part of its Kala Pravah series at 7 Shaktipeeths.

Shakti - Festival of Music and Dance

Events will be held at:

1. Kamakhya Temple, Guwahati
2. Mahalakshmi Temple, Kolhapur, Maharashtra
3. Jwalamukhi Temple, Kangada, Himachal Pradesh
4. Tripura Sundari Temple, Udaipur, Tripura
5. Ambaji Temple, Banaskantha, Gujarat
6. Jai Durga Shaktipeeth, Deoghar, Jharkhand
7. Shaktipeeth Maa Harsidhi Temple, Jaisinghpur, Ujjain, Madhya Pradesh

Sangeet Natak Akademi

It is the **national level academy** for performing arts set up by the Government of India.

- It was set up by the Indian education ministry on **31 May 1952** and became functional the following year, with the appointment of its **first chairman, Dr. P. V. Rajamannar**.
- Dr Rajendra Prasad, the first President of India, **inaugurated it on 28 January 1953** in a special function held in the Parliament House.

Functions:

- The academy functions as the **apex body of the performing arts** in the country to preserve and promote the vast cultural heritage of India expressed in music, dance and drama.
- It also works with governments and art academies in **states and union territories** of the country.

Awards and fellowships:

1. Sangeet Natak Akademi Award
2. Sangeet Natak Akademi Fellowships (Ratna Sadsya)
3. Ustad Bismillah Khan Yuva Puraskar
4. Tagore Ratna and Tagore Puraskar

Shaktipeeths

- Shaktipeeths are sacred sites in Hinduism associated with the Goddess Shakti or Devi, the divine feminine energy.
- According to Hindu mythology, these sites are believed to be where various body parts of the goddess Sati/ Shakti fell to the earth when her body was dismembered by Lord Vishnu's.
- There are numerous Shaktipeeths spread across the Indian subcontinent and beyond, each considered highly sacred by devotees of the Goddess.

2. Anniversary of the Jallianwala Bagh Massacre

On April 13, 1919, Brigadier-General Reginald Dyer ordered British troops to open fire on a peaceful gathering in Jallianwala Bagh, Amritsar, leaving a deep scar on India's collective memory.

Jallianwala Bagh Massacre

1. Background: Protesting the contentious Rowlatt Act

- The act officially known as the *Anarchical and Revolutionary Crimes Act, 1919* was passed in 1919 by the Imperial Legislative Council.
- It had authorized the **British government to arrest anybody** suspected of terrorist activities.
- It also authorized the government to detain such people **arrested for up to 2 years without trial**.
- It empowered the **police to search a place without a warrant**. It also placed severe restrictions on the freedom of the press.
- The primary intention of colonial govt. was **to repress the growing nationalist movement** in the country.
- The British were also **afraid of a Ghadarite Revolution in Punjab** and the rest of the country.

1. The day

- The massacre took place on **13 April 1919** when troops of the British Indian Army (*Gurkha and Sikh infantry regiments*) under the command of *Col. Reginald Dyer* fired rifles into a crowd of Indians.
- The civilians had assembled for a peaceful protest to condemn the arrest and deportation of two national leaders, *Satya Pal and Saifuddin Kitchlew*.
- Dyer **without warning ordered his troops to fire** at the unarmed crowd which included children as well.
- The indiscriminate firing went on for about 10 minutes which resulted in the **deaths of at least 1000 people** and injured more than 1500 people.

1. Aftermath

- In protest against the massacre, **Rabindranath Tagore gave up his knighthood**.
- **Gandhiji relinquished his title 'Kaiser-e-hind'** bestowed on him by the British for his services during the Boer War in South Africa.
- **Michael O'Dwyer**, the then Lieutenant-Governor of Punjab, who had approved the actions of Dyer, was *assassinated by Udham Singh in London in 1940* as revenge against the massacre.
- The heroic treatment of Dyer's heinous act again set a benchmark of colonial arrogance.

Hunter Commission for Inquiry

- In October 1919 the Secretary of State for India, **Edwin Montagu**, ordered the formation of a committee of inquiry into the events in Punjab.
- Referred to as the *Disorders Inquiry Committee*, it was later more widely known as the Hunter Commission (**Not to be confused with Hunter Education Commission**).
- The commission inquiry was concluded **without any significant conclusion**.
- Still, there are long-standing demands in India that Britain should apologize for the massacre.

3. Glacial Lake Outburst Floods

Recently Birendra glacial lake in Nepal collapsed due to avalanche.

Glacial lake outburst flood

- **Glacial lakes**- They are large bodies of water that sit in front of, on top of, or beneath a melting glacier.

- **Glacial Lake Outburst Floods (GLOFs)**- They are sudden and often catastrophic events that occur when water contained within or underneath a glacier or a moraine-dammed glacial lake is released rapidly.
- **Causes**- These floods typically result from the failure of natural dams made of ice, moraine (a mixture of rock, soil, and other debris), or both.
- **Ice and debris avalanches**- Avalanches of ice, rock and debris can impact glacial lakes, causing the release of large volume of water, avalanches occur due to various factors such as seismic activity, steep slopes or destabilization of ice and rock masses.
- **Ice dammed lakes**- Some glacial lakes are dammed by ice instead of moraine, when the ice dam melts or collapse, it can release large volumes of water downstream triggering GLOF.
- **Earthquake**- Seismic activity, including earthquakes can destabilize glacial lakes and their surrounding terrain, leading to failure of natural dams and release of water.
- **Volcanic eruption**- It can trigger GLOFs by melting ice, causing landslides or generating lahars (volcanic mudflows) that can impact glacial lakes.
- **Anthropogenic activities**- Activities such as mining, construction, and deforestation can destabilize the landscape, increase erosion, and contribute to the risk of GLOFs.
- **Vulnerable**- GLOFs pose a significant risks to communities living downstream of glacial lakes, especially in mountainous regions like Himalayas, Andes and Alps, where such lakes are common.

Why Himalayas are more prone to Glacial Lake Outburst Floods?

- **High glacial activity**- The Himalayas are called as **Third Pole** it harbours world's largest glaciers after Arctic and Antarctic ice sheets.
- **Glacial melting**- As temperatures rise due to climate change, these glaciers are melting at an accelerated rate, leading to the formation of numerous glacial lakes which increases the risk of GLOFs.

ISRO said that 130 of the 676 lakes are situated in India, in the Indus (65), Ganga (7), and Brahmaputra (58) river basins have expanded as glaciers are retreating at an ever faster rate due to global warming.

- **Glacial lake formation**- Glacial lakes in the Himalayas are often dammed by unstable moraines, ice, or bedrock, these natural dams are susceptible to erosion, melting, and other forms of degradation, increasing the likelihood of failure and the release of floodwaters downstream.

- **Steep terrain-** The Himalayan region is characterized by rugged, steep terrain, which can contribute to the destabilization of glacial lakes and their surrounding moraines.
- **Unstable movements-** Avalanches, landslides, and rockfalls are common in this environment, posing risks to the stability of natural dams and increasing the likelihood of GLOFs.
- **Seismic activity-** The Himalayas are seismically active, with frequent earthquakes and tectonic activity, they can trigger landslides, avalanches, and the destabilization of glacial lakes, leading to GLOFs.
- **Monsoon climate-** The Himalayan region experiences heavy monsoon rains during the summer months, which can increase the volume of water in glacial lakes and contribute to the weakening of natural dams.
- **Population density-** The Himalayan region is densely populated, with communities living in valleys downstream of glacial lakes. This increases the potential impact of GLOFs on human lives, infrastructure, and livelihoods.

What can be done to mitigate GLOFs?

- **Artificial drainage-** Lowering the water level of glacial lakes can significantly reduce the risk of outburst floods.
- **Study of Ghepan Gath lake, Himachal Pradesh-** It showed that lowering lake levels by 10 to 30 meters had a significant impact reduction on Sissu town, the risks were not completely eliminated but still can minimize potential consequences of GLOF.
- **High Density Polyethylene (HDPE) pipes-** In 2016, Sikkim used HDPE pipes to reduce water levels in South Lhonak Lake.
- **Risk assessment-** Researchers need to continuously monitor the lakes for signs of instability and potential outburst events, this includes using satellite imagery and developing models to predict GLOF risk.

Satellite remote sensing technology by ISRO proves to be an excellent tool for monitoring due its wide coverage and revisit capability

- **Early warning systems-** Establishing effective early warning systems is critical for minimizing damage and casualties, these systems should utilize real-time monitoring data to provide timely alerts to downstream communities in the event of a GLOF threat.
- **International cooperation-** The GLOFs in the Himalayas can affect multiple countries, international cooperation is essential which can foster collaborative efforts such as sharing data, resources and expertise to better understand and mitigate the risks posed by glacial lakes.

- **Research-** Continued research into glacial dynamics, climate change impacts, and GLOF mitigation strategies is necessary to develop innovative approaches that reduce GLOF risk.

4. 100 Years of Vaikom Satyagraha

This year April 1st marks 100 years of the Vaikom Satyagraha, in Kottayam, Kerala.

Vaikom Satyagraha

- Vaikom was the epicentre of the Vaikom Satyagraha, which began in 1924.
- This movement aimed to **challenge the ban imposed on marginalized communities** from entering the vicinity of the **Vaikom Mahadevar Temple** in the princely state of Travancore.
- It sparked similar **temple entry movements across India**, advocating for the rights of untouchables and backward castes.
- It introduced **nonviolent public protest** as a method of resistance in Kerala.

A Precursor to the Vaikom Satyagraha

1. Social and Political Developments

- **Backdrop of Social Injustice:** Travancore, characterized by feudal and caste-based governance, imposed stringent restrictions on lower castes, denying them entry to temples and public spaces.
- **Emergence of Social Consciousness:** By the late 19th century, progressive reforms and missionary activities led to increased awareness and education among lower castes, particularly the Ezhavas.
- **Rise of Educated Elite:** Educated individuals from diverse backgrounds, including lower castes, began to challenge social norms and demand equality in opportunities and rights.

2. Beginning of Agitation

- **Advocacy for Change:** Ezhava leader T K Madhavan spearheaded efforts to challenge temple entry restrictions, advocating for direct action to confront discriminatory practices.
- **Influence of Gandhi's Ideals:** Inspired by Gandhi's principles of non-cooperation, Madhavan sought support from the Indian National Congress (INC) to mobilize a mass movement against untouchability.

Actual Course of Events

1. Agitation

- Leaders such as **T.K. Madhavan, K.P. Kesava Menon, and George Joseph** spearheaded the agitation.
- Despite facing resistance and arrests by the police, the Satyagrahis persisted in their protest for over a year, resulting in numerous arrests and jails.
- Notable figures like **Mahatma Gandhi, Chattampi Swamikal, and Sree Narayana Guru** extended their support to the movement, which gained nationwide recognition.
- The **involvement of women** and support from various regions, including Punjab, highlighted the widespread impact of the Satyagraha.

2. Suspension:

- Initially **suspended in April 1924 at Gandhi's suggestion**, the movement resumed when attempts to resolve the issue with caste Hindu leaders failed.
- The absence of leaders like **T.K. Madhavan and K.P. Kesava Menon, who were arrested**, posed challenges to the movement.
- **V. Ramaswamy Naicker (Periyar) lent support** from Tamil Nadu before also being arrested.
- The resolution for the **right to temple entry** faced resistance in the Assembly, thwarted by traditionalist support and government pressure.

3. Aftermath

- On October 1, 1924, a **procession of Savarnas (forward castes)** submitted a **petition** to the Regent Maharani Sethu Lakshmi Bai of Travancore, **signed by around 25,000 individuals**, urging for the temple's open entry.
- Gandhi's meeting with the Regent Maharani and the **procession led by Mannath Padmanabhan Nair** underscored the growing support for the cause.
- Eventually, on November 23, 1925, **all temple gates were opened to Hindus** except the eastern gate, marking a significant victory.
- The Vaikom Satyagraha laid the groundwork for the **temple entry proclamation of Kerala in 1936** and inspired similar movements' nationwide, promoting social justice and equality.

5. Taiwan's Earthquake and the Pacific Ring of Fire

- Taiwan was struck by its **most powerful earthquake** in at least 25 years.

- Its susceptibility to earthquakes is attributed to its **location along the Pacific “Ring of Fire”** where a majority of the world’s seismic activity occurs.
- Taiwan is primarily influenced by the collision of the **Philippine Sea Plate** and the **Eurasian Plate**.

Pacific ‘Ring of Fire’

- The Pacific ‘Ring of Fire’ or **Pacific Rim**, or the **Circum-Pacific Belt**, is an area along the Pacific Ocean that is characterized by **active volcanoes and frequent earthquakes**.
- **Volcanic arcs and oceanic trenches** partly encircling the Pacific Basin form the so-called Ring of Fire.
- It is home to about **75 per cent of the world’s volcanoes** – more than **450** volcanoes.
- Also, about 90 per cent of the world’s earthquakes occur here.

Its spread

- Its length is over 40,000 kilometres and traces from New Zealand clockwise in an almost circular arc covering **Tonga, Kermadec Islands, Indonesia**.
- It is moving up to the **Philippines, Japan, and stretching eastward to the Aleutian Islands**, then southward along the western coast of North America and South America.

Seismic activity of the region

- The area is along several tectonic plates including the **Pacific plate, Philippine Plate, Juan de Fuca plate, Cocos plate, Nazca plate, and North American plate**.
- The movement of these plates or **tectonic activity** makes the area witness abundant earthquakes and tsunamis every year.
- Along much of the Ring, tectonic plates move towards each other creating **subduction zones**.
- One plate gets pushed down or is subducted by the other plate.
- This is a very slow process – a movement of just one or two inches per year.
- As this subduction happens, rocks melt, become magma and move to Earth’s surface and cause volcanic activity.

GS 2 : Polity, Governance, International Relations

1. Rohingya Refugee Crisis

Recently Rohingya refugees are rescued in the waters of West Aceh, Indonesia has once again drawn attention to the plight of the refugees who are increasingly embarking on dangerous sea journeys to seek a better life.

Rohingya refugees

- The Rohingya are a Muslim minority ethnic group with historical ties to the Arakan kingdom in Myanmar (formerly known as Burma).
- The term "Rohingya" is derived from the word "Arakan" in the Rohingya dialect, with "ga" or "gya" meaning "from."
- Despite claiming generations of residence in Myanmar's Rakhine State, the Rohingya face challenges due to successive governments labelling them as illegal immigrants from Bangladesh.
- **Unique tradition-** Their cultural and religious distinctiveness sets them apart from the majority Buddhist population in Myanmar, and they speak a Bengali dialect different from the common Burmese language.
- Unfortunately, Myanmar has denied them recognition as an ethnic group, rendering them the world's largest stateless population, devoid of fundamental rights and security.
- **Myanmar's 1982 citizenship law-** Rohingya community members (along with other ethnic minorities) can only attain citizenship if they can prove their ancestors resided in Myanmar before 1823.
- Otherwise, even if one of their parents is a Myanmar citizen, they are classified as "resident foreigners" or "associate citizens".
- **Forced displacement-** The Rohingya have been fleeing Myanmar in large numbers since violence erupted in 2012 and escalated dramatically in 2017, resulting in what the UN described as "ethnic cleansing."
- **2017 crisis-** A massive wave of violence erupted in Rakhine, forcing over 750,000 people to seek sanctuary in Bangladesh.
- The brutality of security forces resulted in entire villages being razed, families torn apart, and severe human rights violations, including mass rape.

- Over the years, Rohingya seeks refuge in neighbouring countries such as Bangladesh, Thailand, Indonesia, Malaysia and India.
- **UN fact finding commission-** In 2018, the commission accused Myanmar of having genocidal intent against the Rohingya, it uncovered clear patterns of abuse by the military, including systemic targeting of civilians, sexual violence etc.,
- **Refugee camps in Bangladesh-** An estimated 960,000 Rohingya live in refugee camps in Bangladesh where they are primarily located near Myanmar border in Cox's bazar which houses some of the world's largest and most densely populated refugee camps.
- **Overcrowded camps-** The refugee camps lack basic human necessities

What are the issues that Rohingya face in high sea journeys?

- **Risk high sea journeys-** Returning to Myanmar is virtually impossible and worsening conditions in Bangladeshi relief camps, many Rohingya risk dangerous journeys.
- **Reach other countries-** They undertake treacherous voyages across the Bay of Bengal and the Andaman Sea to reach Muslim-majority nations like Indonesia and Malaysia.
- **Exploitation-** Human traffickers exploit their desperation, charging exorbitant amounts to ferry, they are often given inadequate space and basic supplies, violence against women have been documented.
- **Stranded refugees-** Some Rohingya remain stranded at sea for weeks because countries are reluctant to accept refugees.
- **Illegal immigration-** Some countries detain the refugees along the route on illegal immigration charges, enduring lengthy incarceration without resolution.
- **Deadliest stretch of waters-** UN has estimated that 1 in 8 Rohingya individuals attempting the sea route either dies or disappears rendering Andaman sea and Bay of Bengal among the deadliest stretches of water globally.

What lies ahead?

- The UN refugee agency urgently calls upon regional coastal authorities to take timely action, emphasizing that saving lives and rescuing those in distress at sea is both a humanitarian imperative and a longstanding duty under international maritime law.
- Rohingya crisis requires concerted efforts from the international community to ensure the safety, dignity, and rights of Rohingya refugees are upheld.

- This includes providing adequate humanitarian assistance, addressing the root causes of the crisis in Myanmar, and holding accountable those responsible for human rights violations against the Rohingya population.

2. Aadhaar-Based Payment System (ABPS)

The Aadhaar-Based Payment System (ABPS) has attracted significant attention, mainly because of the many difficulties it encounters

- The Aadhaar-Based Payment System (ABPS) is a unique payment system that utilizes the Aadhaar number as a central key for electronically channelizing government payments

Aim of ABPS

- **Objective:** Provide socio-economically deprived households with work security facilitated by digital technology.
- **Rooted in ideals:** Inclusion in the development process, mitigation of inequality and socioeconomic distress.
- **Recognition:** Internationally recognized, such as by the United Nations Development Programme, for contributing to a productive, equitable, and connected society.

Key challenges related to The Aadhaar-Based Payment System (ABPS):

- **Internet Connectivity Issues:** Accessibility to stable internet connections in rural areas poses a challenge for implementing the ABPS effectively.
- **Fingerprint Recognition Problems:** The ABPS relies on fingerprint recognition for authentication, but issues with fingerprint recognition can hinder the smooth functioning of the system.
- **Difficulties Faced by the Disabled:** The system may not be accommodating to individuals with disabilities, leading to exclusion or difficulties in accessing benefits.
- **Unrecorded Working Days:** There are instances where the system fails to record the days of work performed by individuals, leading to discrepancies in payment.
- **Name Duplication:** Duplicate entries in the system can lead to confusion and errors in identifying beneficiaries and processing payments.
- **Lack of Awareness:** Insufficient awareness among beneficiaries about the ABPS and its processes can result in underutilization or misuse of the system.

- **Errors in Linking and Authentication:** Issues may arise during the linking of Aadhaar details with the payment system, leading to authentication errors and payment delays.

Potential of (ABPS) technology

- **Progressive Principles:** Technology has the potential to serve progressive principles globally and historically, contributing to the advancement of societies.
- **Alignment with Sustainable Development Goals (SDGs):** Technological interventions can play a crucial role in achieving the SDGs, with rural employment guarantee schemes in India serving as effective pathways towards several SDGs, both directly and indirectly.
- **Effective Utilization of Budgetary Allocation:** The substantial budgetary allocation to schemes like MGNREGS should be channeled through a technologically sound system to ensure efficient utilization of funds.

Conclusion

The Aadhaar-Based Payment System faces numerous challenges, highlighting the need for prioritizing workers over technology. While technology holds potential, its alignment with socio-economic goals must ensure inclusivity, efficiency, and effective utilization of resources.

3. Emergence of HIV drugs

On April 1, 2004, the Indian government launched Free Antiretroviral Therapy (ART) for Persons living with HIV (PLHIV). This decision has been one of the most successful .

- **First Antiretroviral Drug Approval:** In March 1987, the US FDA approved the first antiretroviral drug, AZT (zidovudine), offering a glimmer of hope for treatment.
- **Additional Drug Approvals:** Three more antiretroviral drugs were approved shortly after in 1988, expanding treatment options for HIV/ AIDS patients.
- **Introduction of Protease Inhibitors:** A significant milestone occurred in 1995 with the introduction of protease inhibitors, a new class of antiretroviral drugs.

The evolution to free ART

- **Millennium Summit Declaration:** In 2000, world leaders at the UN General Assembly's Millennium Summit set a goal to stop and reverse the spread of HIV.
- **Formation of the Global Fund:** The Global Fund to Fight AIDS, Tuberculosis, and Malaria was established in 2002, advocating for universal access to HIV prevention, treatment, care, and support services.
- **High HIV Prevalence in India:** In 2004, India had an estimated 5.1 million PLHIV, with a population prevalence of 0.4%. However, very few were receiving ART, with only 7,000 PLHIV on treatment by the end of the year.
- **Free ART Initiative:** The Indian government's decision to provide free ART to all adults living with HIV in 2004 was groundbreaking. This initiative aimed to address the barriers of cost and geographical access to treatment.
- **Expansion of ART Facilities:** Over two decades, the number of ART centers in India expanded significantly, from less than 10 to around 700. Additionally, 1,264 Link ART centers have provided free ART drugs to approximately 1.8 million PLHIV.
- **ART Eligibility Criteria Evolution:** The criteria for initiating ART evolved over the years, starting from CD4 count less than 200 cells/mm³ in 2004, to less than 350 cells/mm³ in 2011, and less than 500 cells/mm³ in 2016. Finally, in 2017, the "Treat All" approach was adopted, initiating ART regardless of CD4 count.
- **Rapid ART Initiation Policy:** In 2021, India adopted a policy of rapid ART initiation, starting individuals on treatment within seven days of HIV diagnosis, and sometimes even on the same day. This swift initiation aimed to improve treatment outcomes and prevent transmission.
- **Complementary initiatives to stop the HIV epidemic:** Provision of free diagnostic facilities; attention on prevention of parent to child transmission of HIV (PPTCT) services; prevention, diagnosis and management of opportunistic infections including management of co-infections such as tuberculosis (TB).

Objectives of India's National AIDS Control Programme (NACP) phase 5 by 2025

Ambitious 95-95-95 Targets: The NACP phase 5 sets ambitious targets known as the 95-95-95 targets, aligned with global targets agreed upon by UNAIDS. These targets aim for:

- 95% of all people living with HIV to know their HIV status.
- 95% of all people diagnosed with HIV infection to receive sustained antiretroviral therapy (ART).
- 95% of all people receiving antiretroviral therapy to achieve viral suppression.
- These targets are aligned with global targets agreed by the UNAIDS.

Challenges

- **Delayed Enrolment to ART Facilities:** Late presentation poses challenges to timely initiation of treatment and optimal disease management.
- **Missed doses :** Patients often start feeling better after initiating ART, leading to missed doses or discontinuation of treatment that lead to drug resistance

Measures

- **Sustained Supply and Availability of ART:** Ensuring consistent and uninterrupted access to ART drugs across all regions of the country
- **Private Sector Engagement:** Enhancing engagement with the private sector in the care of PLHIV .
- **Training and Capacity Building:** Continuous training and capacity building of healthcare staff are essential to ensure high-quality service delivery.
- **Integration with Other Health Programs:** Strengthening integration with other health programs, such as hepatitis, non-communicable diseases (NCDs)

Conclusion

India's ART initiative, launched in 2004, has been pivotal in combating HIV/AIDS. With evolving criteria, rapid initiation policies, and ambitious targets, challenges persist, but measures like sustained supply, private sector engagement, and training are being implemented.

4. The WHO Pandemic Agreement

Recently the 9th meeting of the Intergovernmental Negotiating Body (INB) was convened to develop a revised draft of the negotiating text of the WHO Pandemic Agreement.

How Intergovernmental Negotiating Body evolved?

The 'pandemic treaty' was first proposed by Chile and the European Union (EU).

- **Launch year-** 2021,
- **Established by** -World Health Assembly
- **Aim-**To draft and negotiate a convention, agreement or other international instrument under the Constitution of the World Health Organization to strengthen pandemic prevention, preparedness and response.
- **Need-** In light of the impact of the COVID-19 pandemic, World Health Organisation's 194 Member States established a process to draft and negotiate

a new convention, agreement, or other international instrument on pandemic preparedness and response.

- **Principles-** The INB's work is based on the principles of inclusiveness, transparency, efficiency, Member State leadership and consensus.

Key features of the treaty

- **Aim-** To strengthen global defences against pandemics and prevent catastrophic crises by addressing systemic failures revealed by COVID- 19.
- **Pathogen surveillance-** Strengthening surveillance for pathogens with pandemic potential.
- **Enhance workforce capacity-** The health care workforce should be enhanced to respond to pandemics effectively.
- **Improve logistics-** The supply chain resilience should be improved for medical products and equipment.
- **Technology transfer-**Facilitating the transfer of technology to support the production of vaccines, diagnostic tests, and treatments.
- **Intellectual Property (IP) Waiver-** Address the issue of intellectual property rights to ensure equitable access to medical products.
- **WHO PABS System-** Pathogen Access and Benefit Sharing system establishes a mechanism for sharing pathogen information while ensuring equitable access to benefits derived from research.
- **Accountability-** Ensuring robust governance, enforcement and accountability measures within the treaty framework.

What is the significance of the treaty?

- **Equitable access to benefits-** In PABS system, countries would share genome sequence information and samples with WHO-coordinated networks and databases .
- In exchange, manufacturers of diagnostics, therapeutics, and vaccines would be required to provide
 - 10% of their products free of charge
 - 10% at not-for-profit prices
- **Legal obligation-** The legal obligation on provision sharing aims to establish legal obligations for all users of biological materials and genetic sequence data under PABS.
- **Importance of robust PABS system-** It is useful for particularly low- and middle-income countries, including some African nations, as it promotes equitable access to medical countermeasures.
- **Establishment of COP-** It proposed for establishment of the Conference of Parties (COP) to oversee the implementation of the Pandemic Agreement.

The COP suggests that the Agreement could be a classic international treaty adopted under Article 19 of the WHO Constitution as opposed to the alternative Article 21 opt-out regulations.

What are the concerns with the treaty?

- **Concern of developed countries-** Countries such as Australia, Canada, UK, US and European Union have termed the proposed text as step backwards particularly regarding the financing and IP.
- **Hesitancy to share information-** Developing countries are cautious about sharing information on pathogen spread and evolution, especially if they perceive little benefit in return, it is exacerbated during COVID-19 pandemic due to vaccine nationalism.

Vaccine nationalism is a scenario where the wealthy countries sign deals with pharmaceutical companies directly to secure vaccines for their own populations limiting the stock available for others.

- **Global governance challenges-** The absence of adequate enforcement mechanisms hampers coordinated efforts for pandemic countermeasure stockpiles.
- **Lack of enforcement-** The Pandemic Agreement faces significant challenges due to the absence of robust enforcement mechanisms.
- **Risk of ineffectiveness-** Even if the Global North reaches consensus on key issues like technology transfer, the PABS System, and intellectual property waivers, the Agreement could still be rendered ineffective without robust enforcement.
- **Concern with existing regulations-** The international health regulations are legally binding but they fail to prevent unjust travel or trade restrictions and the hoarding of vaccines and other medical countermeasures during the COVID-19 pandemic.
- **Issue with COP-** The COP model mirrors the UN Framework Convention on Climate Change (UNFCCC) summits where all nations receive equal voting rights but it remains uncertain whether negotiators will reach consensus on this structure.
- **IP requirement-** The firms that received public financing need to waive or reduce their IP royalties remains a critical point of debate as pharmaceutical industry is not satisfied with this provision.

What lies ahead?

- The pandemic agreement underscores the understanding that no single government or institution can effectively combat the threat of future pandemics in isolation.
- India underscores the importance of clarity in defining roles and responsibilities especially between developed and developing nations to achieve equitable outcomes.

5. Misuse of Preventive detention

Supreme Court recently discussed the **role and duty of the Advisory Boards** constituted under the **Preventive Detention Laws**.

About the Supreme Court's Ruling:

- The Supreme Court issued a significant ruling on **preventive detention**, characterizing it as a draconian provision.
- It underscores the **need for stringent scrutiny** of preventive detention measures to prevent their misuse.
- The Court emphasized that the **government's failure to address law and order issues** should not serve as justification for resorting to preventive detention.
- It stressed the **need to curtail any arbitrary or routine use** of this measure.

Distinction between Public Disorder and Law & Order Issues

- The Court asserted that preventive detention should **only be invoked in cases of public disorder**, not for general law and order issues.
- It explained that public disorder poses a broader **threat to societal harmony**, whereas law and order problems typically **affect only specific individuals** or a limited section of society.

Criteria for Preventive Detention

- **Habitual offending** should not be the sole basis for invoking preventive detention.
- It reiterated that the activities **warranting such detention** must be **beyond the scope of ordinary law enforcement** measures and capable of subverting societal norms.
- The Court criticized the **tendency of some state governments**, to resort to preventive detentions **without sufficient justification**.

Role of Advisory Board

- The Court underscored the importance of the Advisory Board in **scrutinizing preventive detention orders**.
- It cautioned against the Board merely rubber-stamping such orders and emphasized its duty to assess the **necessity and legality of each detention**.
- The Court annulled **two preventive detention orders** issued by the Telangana government, admonishing it for its arbitrary use of this measure.
- The **Advisory Board serves as a constitutional safeguard** and statutory authority, ensuring that preventive detention is not used arbitrarily or unlawfully.
- It stressed the Board's responsibility to uphold the rights of detainees and adhere to the constitutional mandate outlined in Article 22(4) of the Indian Constitution.

About Preventive Detention in India:

- Preventive detention is the practice of **detaining someone without a trial or conviction** by a court if considered a danger to society.
- **Section 151** of The **Criminal Procedure Code, 1973 (CrPC)** states it as an action taken on grounds of suspicion that some wrong actions may be done by the person concerned.
- A police officer can arrest an individual without orders from a Magistrate or any warrant if he gets any information that such an **individual can commit any offense**.
- The **grounds for Preventive detention** include National security, maintenance of public order, supplies and essential services, and defense of India.
- A detainee under preventive detention can **have no right of personal liberty** guaranteed by **Article 19 or Article 21**.

Safeguards Provided in Constitution:

- **Article 22** of the Indian Constitution **provides safeguards against the misuse of police powers** to make arrests and detentions.
- Every person who is arrested and detained in custody shall be produced before the nearest **magistrate within 24 hours** of such arrest excluding the time for journey.
- A person may be taken to **preventive custody only for 3 months** at the first instance.
- If detention is extended beyond 3 months, the case must be referred to an **Advisory Board** consisting of persons with qualifications for **appointment as judges of High Courts**.
- The detainee is entitled to know the grounds of his detention, but the state may refuse to divulge the grounds of detention in case of **public interest**.

- The detaining authorities **must give the detainee the earliest opportunities** for making a representation against the detention.
- An Advisory Board consisting of persons qualified to be appointed as Judges of a High Court shall be sought opinion.
- They shall present a report before the expiration of the 3 months is in its opinion sufficient **cause for such detention**.

6. Ex-parte Injunctions

The Supreme Court has shown concern over **affluent individuals obtaining pre-trial injunctions** against media and civil society, hindering free speech and public information.

- Trial courts are encouraged to **identify and reduce the misuse of SLAPP Suits**, which are often employed to suppress free speech and public engagement.

Ex-parte injunctions:

- **Ex-parte injunctions** are legal orders issued by a court without the other party being notified or heard.
- These injunctions are issued when there's a belief that **immediate and irreparable damage** will occur before the other party can respond.
- They serve as **temporary measures** to prevent harm, pending a full hearing where all involved parties can present their arguments.
- Their **controversial nature** stems from being granted without the input of the party against whom they are ordered, affecting their rights without a chance to contest initially.

SLAPP (Strategic Litigation Against Public Participation) Suits:

- SLAPP Suits are legal actions by large entities aimed at **intimidating and silencing critics**, obstructing public discussion on their activities.
- SLAPP Suits are a method used by powerful groups to **limit public knowledge and debate** on topics of public interest.
- The judiciary is advised to **acknowledge and address the abuse of litigation** to obstruct free speech and public involvement.

7. India-Philippines relations

India recently supported the sovereignty of Philippines amid rising military tensions between **China and Philippines** on **South China Sea (SCS)** region issues.

Disputes over South China Sea:

- The 1982 **UN Convention on the Law of the Seas (UNCLOS)** was the “the constitution of the seas” and all parties must adhere to it in its entirety, both in letter and in spirit.
- The **Chinese Navy and Coast Guard** have been frequently accused of violating **sovereign waters** of other countries and claiming islands.
- China’s actions have drawn protest from many Asian neighbors, including the Philippines, Vietnam and Indonesia in the **South China Sea (SCS) region**.
- The **Spartly Islands** are a group of islands claimed by Philippines, but China laid troops and **settlements on the archipelago**.

India Philippines Relations:

India and the Philippines have had **diplomatic relations** since 1949, when both countries gained independence.

Political relations:

- When India launched the **Look East Policy** and intensified partnership with ASEAN, including Philippines in 1992.
- With the **Act East Policy initiated** in 2014, it diversified further into political-security; trade and industry and people-to-people realms.
- The **umbrella bilateral mechanism** is the Joint Commission on **Bilateral Cooperation (JCBC)** to discuss engagement in all the areas of mutual interests.
- The Philippines has been supportive of a greater role for India in the **UN Security Council** and supports India’s **G-4 initiative** for Security Council Reform.
- India regularly provides **Humanitarian assistance** during natural calamities and more recently during the **COVID-19 pandemic**.

Defence & Security Cooperation:

- The main stay of **bilateral defence cooperation** is through **capacity building with training** exchanges and visits of delegations.
- Both countries signed a Memorandum of Understanding(MOU) on **Defence Cooperation in 2006** under which a Joint Defence Cooperation Committee (JDCC) was set up.
- MoU on **Defence Industry and Logistics cooperation** occurred in 2017 and have also set up a separate Joint Defence Industry and Logistics Committee (JDILC).
- Defence ties were significantly enhanced with the signing of a contract worth US\$ 374.9 million to supply the **BrahMos missile system in 2022**.

Trade-Ties:

- Bilateral trade between **India and Philippines** increased from USD 1.89 billion in 2015-16 to USD 3.05 billion in 2022-23, crossing **USD 3 billion mark** for the first time.
- The **major items of export from India** include engineering goods, automobiles parts, transmission apparatus, electric transformers, petroleum products, iron & steel semi-finished products, etc.
- Philippines account for around **20% of total Indian pharma exports** to the ASEAN region.
- **Major items of import from Philippines** include Electrical machinery, semiconductors, ores, slag and ashes; copper, lead, plastics, pearls and precious stones, etc.
- **Indian investment** in the Philippines is mainly in the areas of IT& ITES; pharmaceuticals and healthcare; yarn and textiles; infrastructure (airport); agriculture; biomass energy; FMCG etc.
- Estimated Indian investments in the Philippines is valued around US \$ 5 billion.
- **Financial Technology (Fintech)** is one of the focused sectors with JWG on Cooperation in Financial Technology was signed in 2023 for digital payments, and financial inclusion.

Health, Science & Technology:

- Philippines was the first **ASEAN Member** to grant **Emergency Use Authorization (EUA)** for Covaxin, Philippines form nearly **20% of total Indian pharma exports** to the ASEAN.
- An MOU on **cooperation in Traditional Medicine** was signed with **National Institute of Ayurveda, Jaipur**.
- **Bilateral Programme of Cooperation (POC)** in Science and Technology was signed for areas like agricultural biotechnology, health, medical sciences; ICT, **Ocean & Atmospheric Science**.
- India and Philippines **similar environmental issues** like oceanic pollution, illegal fishing and protecting the environment in the region.

Cultural Ties & Diaspora:

- Words with **Sanskrit roots in Tagalog**(their local language) and Laguna Copper Plate inscription was discovered in Philippines written in Kavi derived from Pallava script.
- The **localized version of Indian epic Ramayana** (Maharadia Lawana) testify to the historical links between the two countries.

- The Indian community in the Philippines is estimated to be around 1,50,000, **mainly Punjabis and Sindhis.**
- Sindhis are primarily engaged in **trading, retail sector and manufacturing**, while Punjabis, mostly from rural background are predominantly involved in **micro-financing.**

Location of the Philippines:

- **Philippines** is island country of **Southeast Asia** in the western Pacific Ocean.
- It is an **archipelago consisting of more than 7,000 islands** and islets lying about 500 miles (800 km) off the coast of Vietnam.
- It is **bounded by the Philippine Sea** to the east, the **Celebes Sea** to the south, the **Sulu Sea** to the southwest, and the **South China Sea** to the west and north.

8. Asset Attachments by ED

Prime Minister Modi is considering legal options to return nearly Rs 3000 crore seized by the Enforcement Directorate to the people of West Bengal.

How are seizures made?

- **Enforcement Directorate-** It is responsible for handling cash and other assets it seizes or attaches during investigations under Prevention of Money Laundering Act (PMLA).
- **Conduct search-** ED conducts searches at the premises of suspects with a search warrant under PMLA.
- **Seizure-** Any cash or assets recovered during these searches are seized in the presence of independent witnesses who sign a seizure memo.

What happens after seizure or attachment?

- **Purpose of attachment-** To deprive the accused of the benefits associated with the attached asset, the law ensures that the property remains off-limits to the accused until the trial is complete.
- **Confirmation from adjudicating authority-** After the seizure, ED has 180 days to obtain confirmation from the adjudicating authority regarding the seizure.
- Once the attachment is confirmed, the ED gains the right to take possession of the seized property.
- **Appeal-** The Adjudicating Authority's order can be challenged in the *PMLA Appellate Tribunal* and subsequently in the *high court*. The high court may

either stay the order, restore the property to the owner, or allow ED's possession.

9. Universities must budge on college autonomy nudge

- The National Education Policy 2020 aims for colleges to become autonomous institutions, promoting innovation, self-governance, and academic freedom.
- The University Grants Commission (UGC) introduced a regulation in April 2023 to facilitate this transition, leading to a surge in applications for autonomous status.

Benefits of Autonomy:

- Autonomous colleges can innovate, tailor curriculum, and experiment with teaching methodologies to meet evolving student and industry needs, driving societal development.
- Autonomy fosters accountability and responsibility, enhancing institutional efficiency and motivating faculty and staff for excellence.

Evidence from Rankings:

- The National Institutional Ranking Framework (NIRF) of 2023 indicates the positive impact of autonomy on academic excellence, with over half of the top 100 colleges being autonomous.
- Of the top 10 colleges, half are autonomous, showcasing autonomy as a successful approach to achieving academic excellence.

Challenges and Solutions:

- Some universities impose limitations on autonomy, such as caps on syllabus changes, hindering colleges' ability to innovate.
- Delays in recognizing autonomy by universities hamper efficiency and undermine the spirit of autonomy.
- Universities exhibit reluctance to cede complete autonomy, particularly in crucial areas like syllabus design and course introduction, impeding colleges' ability to adapt.
- Arbitrary fees imposed by universities for affiliation undermine college autonomy and raise questions about fairness and transparency.

- State Councils for Higher Education must ensure the effective implementation of UGC regulations on autonomy, addressing concerns and streamlining decision-making processes.
- Universities need to embrace a culture of trust and collaboration with autonomous colleges, allowing them the freedom to innovate while upholding academic standards.

10. One Million Youth Actions Challenge (1MYAC)

One Million Youth Actions Challenge (1MYAC)

- 1MYAC is a program that encourages **young people aged 10 to 30 to take concrete and meaningful actions for a more sustainable future.**
- The goal is to achieve **one million youth-led actions**, fostering a **global movement towards sustainability.**
- 1MYAC works to promote **four Sustainable Development Goals (SDGs)**: SDG 6 on 'clean water and sanitation', SDG 12 on 'responsible consumption and production', SDG 13 on 'climate action' (climate change) and SDG 15 on 'life on land' (biodiversity).
- The program focuses on **promoting four Sustainable Development Goals (SDGs)**: **SDG 6** for clean water and sanitation, **SDG 12** for responsible consumption and production, **SDG 13** for climate action, and **SDG 15** for life on land (biodiversity).
- It is an initiative launched by **the Swiss Agency for Development and Cooperation (SDC)**, and its thematic network on water called 'Réseau'.
 - The SDC is Switzerland's **international cooperation agency**, part of the Federal Department of Foreign Affairs (FDFA),
- 1MYAC is **promoted by UN CC:Learn** as part of the **UN CC:Learn affiliation programme.**

UN CC:Learn affiliation programme:

- The **One UN Climate Change Learning Partnership**, also known as UN CC:Learn, is a collaborative initiative of 36 multilateral organizations.
- They work together to **help countries build the knowledge and skills necessary to take action on climate change**, including **enhancing climate literacy and other crucial skills to address this challenge.**
- It receives support from the **SDC** and various UN partners.

11. Why Balochistan remains problem in Pakistan?

The Majeed Brigade of the separatist group Baloch Liberation Army (BLA) has claimed responsibility for recent attack on a complex outside Pakistan's strategic Gwadar Port.

Balochistan, in Pakistan's southwest, is the country's largest and most sparsely populated province.

- **Population-** Ethnic Baloch live in Pakistan, Iran and Afghanistan, the Baloch nationalism traces its roots to the early decades of the 20th century, when new international borders came to be drawn in the region.
- **Accession of Balochistan-** At the time of Partition, Balochistan was composed of multiple chiefdoms under British influence. Ahmed Yar Khan, chief of Kalat, sought independence for his people but was compelled to accede in 1948 after Pakistan's invasion of Kalat.
- **Insurgency-** The forced accession of Balochistan led to a series of insurgencies characterized by violent confrontations between Baloch nationalists and the Pakistani state.
- **State repression-** Pakistani security forces have been accused of brutal repression, including extrajudicial killings, torture, and enforced disappearances of Baloch activists, journalists, and civilians.

Amnesty International report from 2011 highlighted the use of 'kill and dump' strategies by Pakistani forces

- **Ethnic differences-** The conflict's persistence can be attributed to ethnic differences as Balochistan's people have a distinct history, language, and culture, which sets them apart from Punjabis or Sindhis.
- **Power imbalance-** Pakistan's formation is based on religion led to skewed power dynamics among different Muslim ethnicities this could be witnessed from Punjab landlords as they held significant influence over the bureaucracy.
- **Economic injustice-** Despite Balochistan's significant natural resources, including oil reserves and strategic locations such as Gwadar Port, the Baloch people have not reaped the benefits.

- **Marginalization-** Economic disparities, including unemployment and preferential treatment of outsiders in job opportunities, have fueled resentment among the Baloch population.
- **Growing militancy-** Baloch nationalist groups, including the Baloch Liberation Army (BLA), have formed alliances with Islamist organizations like the Tehreek-e-Taliban Pakistan (TTP) and the Islamic State.
- **Political turmoil-** In 1974 then Prime Minister Zulfikar Ali Bhutto was assassinated as he was unwilling to grant significant autonomy to Balochistan situation, this marked the significant violence for nationalism.
- **Majeed Brigade-** It is a dedicated suicide squad within the Baloch Liberation Army (BLA) which has been responsible for carrying out high-profile attacks targeting security personnel, government officials, and infrastructure, including Chinese interests in Pakistan.

Why India's role is significant in in Baloch-Pakistan issue?

- **Strategic location-** Balochistan is a region that spans across Pakistan, Iran, and Afghanistan, and has a strategic position at the mouth of the Persian Gulf, a vital waterway for global oil trade.
- **Maritime connectivity-** Balochistan also has access to the Arabian Sea and the Indian Ocean, making it a potential hub for maritime connectivity and trade.
- **Geopolitical dynamics-** Balochistan is home to Baloch minority which is strategically important for the global powers that are competing for influence in Central Asia and the Middle East.
- **New great game-** It refers to the rivalry and competition among regional and global powers for influence and resources in Central and South Asia, especially in Afghanistan and its neighbouring countries.
- **China factor-** China has a strategic interest in Gwadar, a port city in Balochistan, as part of its Belt and Road Initiative and its naval ambitions in the Indian Ocean.
- **Security concerns-** Balochistan's proximity to Afghanistan, where the Taliban regime has recently taken over, adds to the complexity and uncertainty to the regional security dynamics.
- **Change in foreign policy-** India as a rising power with growing economic and security interests in the region, needs to rethink its traditional neutrality and passive approach in the Middle East and Central Asia.
- **Chabahar port-** It is situated in Iran, the port is developed by India, it directly competes with Pakistan's China funded Gwadar port, keeping a check on growing China's influence in the neighbourhood region.

12. Citizen's 'climate rights'

The Supreme Court recently held that people have a **fundamental right** to be free from the adverse effects of climate change while emphasizing that countries like India must uphold their international obligations for healthy and sustainable development [**M K Ranjitsinh & Ors. vs Union of India**].

Background of M K Ranjitsinh & Ors. vs Union of India Case:

- - The case was related to the conservation of the critically endangered **Great Indian Bustard (GIB)**.
 - In 2021, a writ petition was filed by retired government official and conservationist M K Ranjitsinh, seeking protection for the GIB and the Lesser Florican, which are on the verge of extinction.
 - On April 19, 2021 order by SC was imposed restricting the setting up of overhead transmission lines in a territory of about **99,000 sq km** in the **GIB habitat in Rajasthan and Gujarat**.
- The Supreme Court has ruled that people have a “**right to be free from the adverse effects of climate change**”, which should be recognized by **Articles 14 and 21** of the Constitution.
- This judgment was by a **three-judge Bench of Chief Justice of India (CJI) D Y Chandrachud and Justices J B Pardiwala and Manoj Misra**.

Who applied for modification of an earlier case?

- The **Ministry of Power**, the **Ministry of Environment, Forest and Climate Change**, and the **Ministry of New and Renewable Energy** had applied to modify the 2021 order on grounds that
- It had adverse implications for India's power sector, and undergrounding power lines was not possible
- The Paris Climate Treaty (2015) is one of the key grounds for seeking a modification of the 2021 order.

What SC did say in this case?

- **Underground powerlines:** The apex court modified its April 2021 order giving directions for underground high-voltage and low-voltage power lines, and directed experts to assess the feasibility of undergrounding power lines in specific areas after considering factors such as terrain, population density, and infrastructure requirements

- **The earlier direction was not feasible:** The ruling acknowledged that its earlier directions, “besides not being feasible to implement, would also not result in achieving its stated purpose, i.e., the conservation of the GIB”.
- **Suitable relationship between FR and DPSP:** The court emphasized that when addressing environmental concerns outlined in the Directive Principles of State Policy, they must be interpreted in conjunction with the right to life and personal liberty as enshrined in Article 21.

What are the implications of the judgment for environmental jurisprudence?

- **Strengthening Environmental and Climate Justice:** The judgment emphasizes bolstering environmental and climate justice by recognizing the multifaceted impacts of climate change on various communities.
- **Expansion of Article 14 and Right to Life:** The judgment expands the scope of Article 14 of the Constitution, which guarantees equality before the law, to encompass environmental concerns.
- **Influence on Public Discourse and Government Policies:** The judgment is expected to influence public discourse on environmental issues, shaping perceptions and priorities regarding environmental protection.
- **Establishment of Legal Precedent:** By acknowledging the “right against adverse effects of climate change,” the judgment establishes a significant legal precedent.

Conclusion: The Supreme Court’s recognition of citizens’ “right to be free from adverse effects of climate change” expands constitutional protections, strengthens environmental justice, influences policy discourse, and sets a crucial legal precedent.

13. Holistic approach to ‘one health’

In the past, we have seen that there is **interdependence between humans, animals, and the environment** has been made increasingly evident with the emergence of pandemics such as COVID-19.

- It is not just humans who are affected by pandemics but also livestock – an example being the outbreak of **lumpy skin disease** that has spread across countries.

Why an integrated idea like the ‘One Health’ Mission is needed?

One Health is an **interdisciplinary approach** that recognizes the interconnectedness of human health, animal health, and environmental health. It emphasizes

collaboration across various sectors, including medicine, veterinary science, ecology, and public health, to address health challenges comprehensively.

Key features of National One Health Mission:

- **Intersectoral Collaboration:** The mission aims to coordinate, support, and integrate all existing One Health initiatives in the country, including the Ministries of Health and Family Welfare, Fisheries, Animal Husbandry and Dairying, Environment, and Science and Technology
- **Integrated Disease Surveillance:** The mission implements integrated disease surveillance within and across human, animal, and environmental sectors to address communicable diseases, including zoonotic diseases, and improve overall pandemic preparedness and integrated disease control.
- **Consolidation of data:** The mission creates an integrated, science-based environment where researchers from various disciplines can use laboratories as necessary and generate requisite inputs for One Health Science, including databases and models with a consolidated approach of ecologists, field biologists, epidemiologists, and other scientists.

Challenges in National One Health Mission

- **Limited Database:** There have been limited efforts to develop databases and models with a consolidated approach of ecologists, field biologists, epidemiologists, and other scientists to understand and respond to the drivers that threaten health and optimize the effectiveness of public health systems in achieving these goals within each sector.
- **Lack of Awareness and Understanding:** The lack of awareness and understanding of the One Health concept among stakeholders hinders collaborative efforts required to address complex public health issues
- **Funding Constraints:** Funding constraints are a significant barrier to implementing One Health interventions, especially in low- and middle-income countries that may need more resources to invest in One Health initiatives

Conclusion: To address challenges in the National One Health Mission, efforts must focus on enhancing data collection, raising awareness among the stakeholders, and securing adequate funding. These measures are essential for effective implementation and holistic health management.

14. Strong Areas of Cooperation between India and the U.S.:

The U.S. announced its Ambassador to India after a gap of two years.

Details:

- The United States announced its ambassador to India in March 2023, after a gap of two years.
- There will be greater engagement between India and the U.S. in forums like G20, I2U2, and Quad.
- Moreover, Indian Prime Minister Narendra Modi will visit the U.S. in June 2023 and American President Joe Biden will visit India in November 2023.
- The India-U.S. Initiative on Critical and Emerging Technology (introduced in 2022) has the potential to expand strategic technology partnerships and defence industrial cooperation between the two countries.
- The U.S.-India Strategic Energy Partnership was introduced in 2020 to enhance cooperation in the fields of energy security, energy access, and climate change.
- The Indo-Pacific partnership intends to enhance security and economic growth, promote trade and investment, and ensure connectivity in the region.
 - It is based on the concept of free, open, and inclusive Indo-Pacific region including the sovereignty and territorial integrity of all countries.
 - One of the major objectives is to counter China's growing influence in the region.
 - It involves a range of initiatives like information sharing, joint military exercises, etc. They also cooperate in the field of cybersecurity, maritime security, and counter-terrorism.
- India and the U.S. also share concerns about China's growing assertiveness in the South China Sea, and its efforts to establish economic dominance through the Belt and Road Initiative (BRI).
- India's expanding consumer market makes it an attractive destination for U.S. businesses.
- There is a growing demand for diversifying supply chains due to geopolitical tensions.

Successful Initiatives of India-U.S. Ties:

- Some of the key moments of the relationship between the two are the nuclear deal, the liberalization of markets, and the U.S.-aided Green Revolution.
- The U.S. also played a role in making India an IT superpower.
- In the area of combating climate change, both countries have cooperated for renewable energy, and joint research and development.
- Additionally, India and the U.S. have worked together on space technology.

Areas of Concern:

- The U.S. is demanding India change its stance on the Ukraine crisis, whereas India is seeking stronger action from the U.S. against China.
- India is looking forward to better relations with the U.S. However, it is also reluctant to sever its ties with Russia.
- Moreover, India is a president (till September 2023) of the Shanghai Cooperation Organization, which includes China and Russia as its members.
- Russia in its new foreign policy strategy has identified India and China as its major allies.
- Realigning U.S. supply chains to India has multiple challenges. For instance,
 - India does not have a developed infrastructure, logistics, and regulatory systems like China.
 - The legal and bureaucratic system in India is complex.

Conclusion:

- Despite the deepening relations between the U.S. and India, there are areas where both countries diverge and face trust issues.
- The governments of both countries should take steps to promote closer economic ties and facilitate investment.

15. Candidates' Right to Privacy from Voters

The Supreme Court ruled that **candidates have a right to privacy from voters** and are **not required to disclose every aspect** of their personal life and possessions.

The judgment came in a case where an MLA's election was challenged for not declaring vehicles as assets. The Court ruled in favour of the MLA, stating that once sold, vehicles cannot be considered assets.

Statutory provisions regarding declarations by Election candidates as per RPA 1951:

1. **Section 33 of the Representation of People's Act (RPA), 1951**, governs nominations for election candidates and requires valid information presentation.
2. **Section 36 of the RPA, 1951**, allows scrutiny of nominations by returning officers, who can reject nominations for defects of a '**substantial character**'

What did SC say?

1. Supreme Court ruled that **voters' right to know is not absolute**.
2. A candidate's privacy on **matters irrelevant to their candidature** is not a corrupt practice under Section 123 of the RPA, 1951.
3. **Non-disclosure of certain personal items** is not a substantial defect under Section 36 of the RPA, 1951.
4. Candidates are **not obligated to disclose every item** of movable property they own.
5. **Suppressing information about expensive items** like watches can be a substantial defect. Ownership of simple items may not constitute a defect in disclosure.

Voters in India have certain rights protected by the Election Commission of India (ECI) and the Constitution:

1. **Right to Know:** Voters have the right to know about candidates' criminal records, financial status, manifesto, etc.
2. **Voting rights of NRIs:** Non-resident Indians (NRIs) can vote in Indian elections.
3. **Voting rights of Prisoners:** Prisoners are not permitted to vote.
4. **NOTA (Right Not to Vote):** Voters can choose NOTA if they feel none of the candidates are suitable.
5. **Tendered Voting Rights:** Voters can vote separately if someone else has wrongly voted on their behalf.
6. **Voting rights of Disabled or Infirm Citizens:** The ECI assists disabled or infirm citizens in casting their votes.

1. Significance of data in Education

- The Annual Status of Education Report (ASER) 2023 sheds light on the foundational skills of 14-18-year-olds, emphasizing the importance of data-driven insights for improving education outcomes.
- Despite progress, the report underscores persistent challenges in reading proficiency among adolescents, urging policymakers and practitioners to delve into the data for actionable insights.

Foundational Learning Trajectories:

- ASER 2023 Beyond Basics survey reveals that 26% of 14-18-year-olds struggle to read a standard two-level text in their regional language.
- Concerns arise from historical trends, as learning trajectories tend to remain flat, making it challenging for older students to acquire foundational skills if missed in primary grades.

Addressing Past Failures:

- Analysis suggests that a significant portion of adolescents lacking basic reading skills are either enrolled in lower grades or out of school.
- Low attendance rates in secondary grades highlight the need for holistic interventions beyond school-based programs to encourage re-engagement with education.

Importance of Reading Materials and Libraries:

- The availability of reading materials outside school textbooks is limited in rural households, impacting reading habits and abilities.
- Community libraries managed effectively, can foster reading habits, creativity, and critical thinking, requiring dedicated individuals and supportive environments.

Youth Aspirations and Careers:

- ASER 2023 reveals aspirations of 14-18-year-olds, with a majority aiming for college education, particularly among girls.
- However, lack of exposure to diverse career options and mentorship hampers informed decision-making and preparation to fulfil aspirations.

Perceptions of Vocational Education:

- Negative perceptions surrounding vocational education in some districts highlight the need for contextualized and aspirational vocational courses.
- Positive examples from Solan demonstrate the potential of on-the-job training and relevant information on career prospects in shaping vocational aspirations.

Leveraging Technology Use:

- Growing smartphone access among youth presents an opportunity to leverage digital technology for educational purposes.
- Collaboration among educational technology agencies, industries, and professional groups can provide relevant learning opportunities aligned with youth aspirations.

16. India-Mauritius Tax Treaty

India and Mauritius amended their **double taxation avoidance agreement (DTAA)** to include a **principal purpose test (PPT)** aimed at curbing tax avoidance.

- However, the **amended protocol has not been ratified or notified by the Income Tax Department.**
- There were concerns that **investments through Mauritius might face increased scrutiny by tax authorities, potentially affecting past investments as well.**

Double taxation occurs when the **same income is taxed twice in two different jurisdictions before it becomes net income.**

To address this issue and encourage international economic activities, **countries sign Double Taxation Avoidance Agreements (DTAAs).**

These agreements establish **agreed-upon tax rates and jurisdictions for specific types of income received by tax residents of one country from another country.**

DTAA aims to prevent **international double taxation and promote capital investment, trade, and economic activities between the signatory nations.**

The agreements may cover various categories of **income, depending on the types of businesses and holdings citizens have in each other's countries.**

17. Economic and Social Survey of Asia and the Pacific 2024 by UNESCAP

The **United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)** recently released the report "Economic and Social Survey of Asia and the Pacific 2024," highlighting the expected impact of rising temperatures on India's economy by 2030.

Key Highlights:

Impact on Working Hours and Productivity:

- India is projected to witness a **decline** of approximately **5.8%** in daily working hours by **2030** due to **rising temperatures.**

- **Outdoor workers**, especially in **agriculture** and **construction** sectors, will face the most severe consequences.
- Decreased **labour productivity** and **economic output** are expected, leading to **lower fiscal revenues**.

Spread of Diseases and Healthcare Expenditure:

- Climate change is anticipated to contribute to **the spread of diseases**, necessitating **higher government spending** on healthcare.
- Additional **fiscal costs** will be incurred for **disease management** and **prevention**, straining healthcare systems.
- Government **revenue collection** might decline as **economic output decreases** due to increased illnesses.

Agricultural Subsidies and Fiscal Expenditure:

- Climate change is likely to necessitate larger **agricultural subsidies** as yields decrease.
- Approximately **1.2%** of GDP was spent on government food subsidies in fiscal year 2022 to alleviate rural poverty.
- Further investment is needed to enhance the **resilience** of the **agricultural sector**, potentially affecting **fiscal expenditure allocations**.

Youth Productivity and Skill Development:

- The Asia-Pacific region, including India, boasts a significant youth population aged **15-24 years**.
- Policies are needed to enhance the productivity of this **demographic group** to meet regional labour demand.
- Emphasis on accessible education and acquisition of **flexible, market-oriented skills** is crucial, especially amidst **digital** and **green transitions**.

Job Creation and Infrastructure Investment:

- Increasing domestic investment is vital for job creation and economic growth.
- Government policies should focus on improving both **"hard" infrastructure** (transportation, energy, telecommunications) and **"soft" infrastructure** (education, health services).
- Enhanced business climate and infrastructure can foster economic development and employment opportunities.

About UNESCAP:

- The UNESCAP, headquartered in **Bangkok, Thailand**, was established in **1947** as the Economic Commission for Asia and the Far East (ECAFE) before becoming ESCAP in **1976**.
- It serves as a platform for regional governments to address economic and social issues and strengthen cooperation.

18. Land portions from 10 cantonment boards to be run by local bodies

The Center has decided to reduce the land jurisdiction of 10 key cantonment boards across five states and transfer them to state local bodies.

- Military areas within cantonments will be transformed into "**exclusive military stations**" under complete army control.

Reason for move:

- The move is part of the Prime Minister's plan to "**undo the colonial legacy**" and **introduce various governance reforms**.
- Previously, **civilians in cantonments lacked access to state government welfare schemes via municipalities, but now they'll be able to avail them**.
- Cantonments have **become unmanageable**, leading to **conflicts between military and civilian residents**.
- This step will **ease strain on the defense budget by reducing the need for developing and maintaining civilian areas within cantonments**.
- The Army will be able to focus on the development of military stations "excised" out of cantonments, strengthen their security, simplify their land management and prevent encroachments.

19. EU-India Collaboration : Significance of EV Battery recycling

European Union (EU) and India announce collaborative initiative for electric vehicle (EV) battery recycling.

About the Initiative:

- This collaboration falls under the **India-EU Trade and Technology Council (TTC)**, emphasizing the shared dedication to sustainable development and technological innovation.
- This initiative aims to **boost collaboration between small and medium-sized enterprises (SMEs) and startups from both regions.**
- It facilitates the **exchange of knowledge and expertise essential for promoting circular economy practices and attaining carbon neutrality objectives.**
- **Reduces environmental impact:** Recycling batteries **keeps them out of landfills, reduces the need for mining,** and reduces the carbon footprint of raw materials.
- **Conserves resources:** Recycling reduces the need for virgin resources, which can be resource-intensive and ecologically damaging.
- **Reduces greenhouse gas emissions:** Lithium-ion batteries can **reduce energy consumption and greenhouse gas emissions.**
- **Repurposes valuable materials:** Reusing 50% of these batteries and efficiently recycling them can decrease the yearly need for **new lithium, cobalt, nickel, and manganese** mining by **3% in 2030 and 28% in 2050.**
- **Makes EVs more affordable:** Promotes circular economy to **reduce the cost of new batteries.**
- **Meet targets of Battery Waste Management Rules, 2022:** It has set a target of **90% recovery of battery material by 2026-27 onwards,** with 70% by 2024-25 and 80% by 2026.

Challenges in EV Battery recycling:

- **Complex chemistry:** The chemistry of EV batteries varies between formulations, which can make recycling difficult.
- **Volume and scale:** As more EVs are on the road, the volume of batteries reaching the end of their life cycle will increase.
- **Cost:** The complex nature of battery components and the need for specialized equipment can make recycling expensive.
- **Lack of standardization:** There are no standardized processes for assessing the remaining capacity of EV batteries.
- **Environmental impact:** Recycling processes can consume a lot of energy and generate toxic emissions.
- **Safety:** Spent lithium-ion batteries (LIBs) contain toxic and flammable materials that can catch fire or explode.

- **Lack of authorized agencies running battery disposal and recycling programs:** Around 90% of India's used batteries are either handled by the unorganized sector or end up in landfills.

India's effort for EV Battery recycling:

The Battery Waste Management (Amendment) Rules, 2023:

- The Battery Waste Management (Amendment) Rules, 2023, are introduced to **improve battery waste management.**
- The Rules have **established measurable targets for collection and recycling** within **specific compliance timeframes.**
- They aim for a **90% recovery of battery material**, with targets set at 70% by 2024-25, increasing to 80% by 2026, and **ultimately reaching 90% after 2026-27 onwards.**
- Producers will be required to **incorporate 5% recycled material in the total dry weight of a cell by 2027-28**, increasing to 20% by 2030-31.
- The regulations allow for **transactable Extended Producer Responsibility certificates** for producers who ensure environmentally sound management of waste batteries, calculated based on the weight of the batteries processed.

20. Asset Disclosure for Election Candidates

The Supreme Court has established that candidates in elections have a **right to privacy**. This means they are **not required** to share every detail of their **personal assets with the public**.

Asset Disclosure:

- It is important to note that **not** revealing minor assets does not amount to **corrupt practices**.
- This is in line with **Section 123** of the Representation of People's Act, 1951.
- Similarly, such non-disclosure is not seen as a significant error according to **Section 36(4) of the same Act**.

Key Provision of the RPA Act:

- **Nomination Process (Section 33):** This section mandates that election candidates must submit accurate information when they register for candidacy in elections.

- **Scrutiny of Nominations (Section 36):** It outlines how nominations are examined. A returning officer has the authority to reject nominations if there are serious issues or 'substantial character' defects.
- **Corrupt Practices (Section 123):** This section defines what constitutes corrupt practices, describing actions and behaviours that are illegal or unethical during the electoral process.

21. Curative Petitions

The Supreme Court recently used a **curative petition** to overturn an arbitral award against the Delhi Metro Rail Corporation.

Curative Petitions:

- A curative petition serves as a last resort legal remedy used to address grievances after the **dismissal of a review petition** by the Supreme Court of India.
- This procedure was first introduced in the landmark case of **Rupa Ashok Hurra vs. Ashok Hurra in 2002**.
- The primary goal of a curative petition is to **prevent miscarriages of justice** and the **misuse of the judicial process**.
 - These petitions are crucial for maintaining the **integrity of the legal system**.
- Curative petitions are based on **Article 137 of the Indian Constitution**, which permits the Supreme Court to review its previous judgments.
 - This is further supported by **Article 142**, empowering the Supreme Court to pass orders for securing complete justice.
- These petitions must be **filed within 30 days** from the date of the judgment or order.

Eligibility Criteria:

- Cases involving violations of natural justice principles.
- Situations where the judges did not hear the petitioner before making their decision.
- Instances where a judge failed to disclose their connections with the subject matter, which could suggest bias.

Procedure:

- The curative petition process is initiated only after the dismissal of review petitions. It is handled by the three **senior judges of the Supreme Court**, along with the judges involved in the original case.
- Decisions on these petitions are usually **made in chambers**, although an **open-court hearing can be requested**.

22. Organ transplantation in India

The **Union government** has recently launched an investigation into **organ transplants**, focusing on violations of the **Transplantation of Human Organs & Tissues Act (THOTA)**.

About Organ transplantation in India:

- **THOTA, 1994** is designed to regulate the removal, storage, and transplantation of human organs and tissues exclusively for therapeutic purposes and to curb commercial transactions involving them.
 - However, it does **not** cover **artificial organs**.
- **THOTA** was updated in **2011**, changing its name from "**Transplantation of Human Organs (Amendment) Act, 1994**" to its current name and it now acknowledges **Brain Stem death** as a legal form of death, which facilitates more organ and tissue transplants compared to natural cardiac death.
- The **National Organ & Tissue Transplant Organization (NOTTO)**, a national-level entity under the Ministry of Health and Family Welfare, **coordinates** and **networks** the procurement and distribution of organs and tissues across the country.

23. States' Disputes with the Centre

The Supreme Court emphasized on the need for **cooperation**, not **competition**, between the Union and the states in handling requests for **disaster relief**.

Issues Raised by Tamil Nadu, Kerala, and Karnataka:

Tamil Nadu:

- **Accused the Centre** of neglect and delayed disaster relief funds of nearly **₹38,000 crore** for cyclone and flood relief.

Kerala:

- Filed a unique lawsuit in the Supreme Court, criticizing the Centre for interfering with its **net borrowing limit**, which pushed the state towards a financial crisis.

Karnataka:

- Requested **₹18,171.44 crore** from the National Disaster Response Fund for drought relief but faced silence from the Centre for six months.
- The state suffers from severe drought, affecting **223 of 236 taluks**.
- Estimated crop damage cost **₹35,162.05 crore**.
- Karnataka's total financial request for drought relief includes amounts for **crop loss, drinking water, and cattle care** totaling **₹30,171.48 crore**.

Constitutional and Legal Framework:

Borrowing Powers of States:

- **Article 293** allows states to borrow within India, but they must not have outstanding loans from the Centre without its consent. The Centre can impose conditions on state borrowing.

Supreme Court's Role:

- **Article 131** grants the Supreme Court the authority to hear disputes directly between the Centre and one or more states.

24. Committee on Queer Community

The **Ministry of Law and Justice** announced the formation of a **committee** aimed at addressing issues faced by the **queer community**.

Committee on Queer Community:

- The committee will be chaired by the **Cabinet Secretary** and will include senior officials from several key ministries:
 - Ministry of Home Affairs
 - Ministry of Social Justice and Empowerment
 - Ministry of Law and Justice
 - Ministry of Women and Child Development
 - Ministry of Health and Family Welfare
- This formation is a direct response to the **Supreme Court's** directives in the *Supriyo v Union of India* case of 2023, where the court held that there is no fundamental right to marry for **LGBTQIA+ persons** under the **Special Marriage Act (SMA)**.

Responsibilities of the Committee

- The committee is tasked with implementing measures to ensure that individuals from the queer community can access **goods, services, and social welfare schemes** without discrimination.
- It will also focus on protecting the community from involuntary medical treatments, violence, and coercion, promoting a safer and more inclusive environment.

25. Sugar Processed Foods

As per recent report Nestle's products for babies in Asia, Africa and Latin America were found to contain added sugars, while the same products sold in Europe did not have it.

Key highlights of recent report on Nestle's products

- **Report by-** Public Eye in collaboration with the International Baby Food Action Network (IBFAN)
- **Discrepancy in nutritional standard-** Nestle was criticized for applying different nutritional standards in different countries.
- **High level of sugar-** Baby food products marketed in low and middle-income countries as healthy and essential for children's development were found to contain high levels of added sugars, similar products sold in Switzerland where Nestle is headquartered did not contain added sugars.
- **Lack of transparency-** The report pointed out that Nestle did not provide clear information about the quantity of sugar content on the packaging of its products, this could mislead parents into believing that these products are healthier than they actually are.
- **Health risks-** The presence of added sugars in baby food products poses risks to children's health, excessive sugar consumption can contribute to various health issues including obesity, diabetes and dental problems.
- **Poor diet habits-** Introducing babies to sweet tastes at a young age may also reinforce a preference for sugary foods, leading to poor dietary habits later in life.

What are the harmful effects of added sugars particularly for babies?

- **Nutritional impact-** Consuming foods high in added sugars can lead to imbalances in the diet, potentially displacing more nutritious foods and nutrients.

- **Impact on health-** Excessive sugar intake is associated with an increased risk of obesity, type 2 diabetes, cardiovascular disease, and dental caries. Babies and young children are especially vulnerable to these health risks due to their developing bodies and eating habits.

Indian Council of Medical Research study estimates that 101.3 million people in India could be diabetic.

- **Long term effects-** Experts warn that high sugar intake can put pressure on baby's pancreas potentially leading to diabetes and obesity in the future, excess sugar can turn into triglycerides, leading to fatty liver and insulin resistance.
- **Regional health disparity-** World Health Organization (WHO) has issued a warning about the alarming increase in obesity rates, especially in low and middle-income countries, where it has escalated to "epidemic proportions."
- **Surge in NCDs-** The rise in obesity is contributing to a surge in non-communicable diseases like cardiovascular disease, cancer and diabetes. One of the primary culprits behind this epidemic is the heightened consumption of highly processed foods that are often loaded with sugar.
- **Impact of Maltodextrin-** Maltodextrin is used to enhance the flavour and texture but has higher glycemic index than a table sugar, which can quickly raise blood sugar levels.

Glycemic index is a measure used to determine how much a food can affect your blood sugar levels.

- **Addictive nature-** Sugar has addictive properties and can lead to cravings for sweet foods, this may predispose them to develop a preference for sweet tastes potentially leading to overconsumption of sugary foods in the future.
- **Tooth decay-** Early exposure to sugar, especially through frequent consumption of sugary foods and beverages can increase the risk of tooth decay and dental cavities in infants and young children.

What lies ahead?

- Government authorities are warning against branding items with added sugar as "healthy" and have called out misleading promotion and marketing tactics.
- Ministry of Consumer Affairs has asked the Food Safety and Standards Authority of India to initiate appropriate action against the Nestle group for allegedly selling baby products with high sugar content in India.

- The impact of high sugar processed food is a global health concern, hence it underscores the need for better dietary practices and policies to combat these trends.

26. Voluntary Code of Ethics (CoE)

Twitter (now X) complied with India's Election Commission by **removing four posts** from different political parties due to electoral code violations during the **Lok Sabha elections**.

- This is part of the **Voluntary Code of Ethics (CoE)** to ensure fair elections.

Voluntary Code of Ethics (CoE):

- The CoE was introduced in 2019 by **social media platforms (SMPs)** and the **Internet and Mobile Association of India (IAMAI)** to encourage free and ethical electoral processes on social media.

Key Features of CoE:

- **Transparency** in paid political ads is a crucial focus, ensuring that the content is openly acknowledged.
- **Pre-certification** requires political ads to be reviewed and certified by the Media Certification and Monitoring Committee before they're published on social media.

Origins and Implementation of CoE:

- As social media's role in politics increased, the **Election Commission of India (ECI)** created a committee, led by Deputy Election Commissioner Umesh Sinha, to examine its impact on elections.
- The committee recommended changes to the **Representation of People Act, 1951**, addressing social media activity in the critical 48 hours before polling.
- **IAMAI** and social media platforms developed the **Voluntary Code of Ethics for General Election 2019**, which was implemented immediately and applies to all following elections.

Commitments Under CoE:

- **Rapid Response:** Social media platforms must acknowledge and process ECI's notifications of possible violations within three hours.

- **Prohibition Period:** The CoE emphasizes compliance with Section 126 of the Representation of People Act, which restricts displaying electoral content during the 48-hour period before polling ends.
- **Dedicated Reporting Mechanism:** SMPs have a high-priority channel for ECI to quickly report and act on violations.
- **Grievance Redressal:** Social media platforms have a dedicated grievance redressal channel to handle reported violations promptly.

27. Allegations of Human Rights Violations:

Survival International, an organization advocating for indigenous and tribal peoples, released a report on **World Heritage Day 2024**, accusing UNESCO of complicity in human rights abuses against indigenous communities in and around several UNESCO World Heritage Sites.

- **Nature of Violations:** Indigenous lands being used for World Heritage Sites have seen torture, rape, illegal evictions and killings.
- **List of Affected Sites:**
 - **Africa:** Ngorongoro Conservation Area (Tanzania), Kahuzi-Biega National Park (Democratic Republic of the Congo), and Odzala-Kokoua National Park (Republic of Congo).
 - **Asia:** Kaeng Krachan Forest Complex (Thailand), Kaziranga National Park (India), and Chitwan National Park (Nepal).

Who are indigenous people?

- Indigenous Peoples are **distinct social and cultural groups** that share **collective ancestral ties** to the lands and natural resources where they live, occupy or from which they have been displaced.
- The **land** and **natural resources** on which they depend are **inextricably linked** to their **identities, cultures, livelihoods**, as well as their **physical and spiritual well-being**.
- **No official definition of "indigenous"** has been adopted by any UN body, given the diverse nature of indigenous peoples.
- Indigenous peoples can be identified by the following **characteristics**:
 - They **self-identify** as Indigenous Peoples.
 - They have a **strong link to particular territories** and the surrounding natural resources.
 - They have **distinct social, economic, or political systems**.
 - They have a **distinct language, culture, and beliefs**.
 - They are **politically and socially marginalized**.

Issues faced by Indigenous people:

- **Human rights violations:** Indigenous people face many human rights violations, including **violence, forced assimilation**, abuse, **marginalization**, and **dispossession** of land.
 - They are also often **denied control over their own development** and lack **equal access to basic social services**.
- **Poverty:** They make up about 6% of the global population, but account for **about 19% of the extreme poor**.
- **Education:** Lack of education can affect Indigenous people's future lives and job opportunities.
- **Health:** Indigenous people's health is affected by their living conditions, income levels, employment rates, and access to safe water, sanitation, health services, and food.
- **Natural environment:** Indigenous people are among the first to face the **direct adverse consequences of climate change**.
 - Their livelihoods are affected by climate change, due to their dependence upon, and close relationship with, the environment and its resources.
- **Internal displacement:** Displacement can have profound effects on indigenous peoples, including loss of cultural identity, language, and traditional knowledge.
 - It can also lead to **poverty, social marginalization, and health problems**.
- **Discrimination:** Discrimination against Indigenous people can impact their rights to healthcare, dignified work, and political participation.

Steps Taken for the Protection of Indigenous People:

Global steps:

- **UN Declaration on the Rights of Indigenous Peoples:** This declaration requires that indigenous peoples' consent is obtained in matters that are important to their rights, survival, dignity, and well-being.
- **UN Permanent Forum on Indigenous Issues (UNPFII):** This forum was established in 2001 to integrate indigenous peoples as participants with similar rights to states.
- **Expert Mechanism on the Rights of Indigenous Peoples (EMRIP):** This is a global institutional mechanism that promotes indigenous peoples' rights.
- **UN Special Rapporteur on the Rights of Indigenous Peoples (UNSR):** This is a global institutional mechanism that promotes indigenous peoples' rights.

28. Legal provisions of star campaigners

Sunita Kejriwal, wife of Delhi Chief Minister Arvind Kejriwal, was appointed as a 'star campaigner' by the Aam Aadmi Party (AAP) for its campaign in Gujarat.

- **Representation of People's Act, 1951-** Section 77 of the Act provides for law relating to expenditure incurred by 'leaders of a political party'. These 'leaders of a political party' are popularly known as 'star campaigners'.
- **About-** Star campaigners are prominent individuals appointed by political parties to attract more votes during elections. They are usually top leaders of a party but can also include other celebrities.

There's no specific law defining who can be a star campaigner.

- **Guidelines-** The Election Commission has issued guidelines the Model Code of Conduct (MCC) regulating poll campaign by star campaigners.
- **Eligibility-** These campaigners must be members of the political party that appoints them.
- **Appointment limits-**
- **Communication-** The names of star campaigners must be communicated to the Election Commission (EC) and the Chief Electoral Officer (CEO) of the relevant states within seven days from the date of election notification.
- **Multi-phase elections-** In multi-phase elections, a political party can submit separate lists of star campaigners for different phases. However, major parties often provide a single list applicable to the entire state.
- **Role of Election Commission-** The Supreme Court has stated that the Election Commission does not have the authority to decide who can be a star campaigner.

What are the financial regulations for star campaigner?

Representation of the People Act (RP Act) outlines the financial regulations for election campaigning in India.

- **Travel expenses-** Expenditure incurred by star campaigners on travel for party campaigning is not counted as part of a candidate's election expenditure.
- **Election expenditure limits-**
 - Larger States- Rs 95 lakh per constituency
 - Smaller States- Rs 75 lakh per constituency.

- **General campaigning-** Star campaigners' expenses remain separate from candidates' expenses only if they limit themselves to general party campaigning.
- **Rally/meeting participation-** If a star campaigner explicitly seeks votes for a candidate or shares the stage with them, the rally/meeting expense is added to the candidate's expenditure.
- **Multiple candidates-** When multiple candidates share the stage with a star campaigner, the rally's expenditure is divided equally among them.
- **Candidate promotion-** If a candidate's posters or photographs are displayed at a star campaigner's rally in their constituency, the entire expense of the rally is allocated to the candidate's election expenses.
- **Boarding/ Lodging expenses-** Any boarding or lodging expenses incurred by a star campaigner for campaigning are included in the candidate's expenditure account, regardless of who pays for it.
- **Joint travel-** If a candidate travels with a star campaigner, 50% of the star campaigner's travel expenditure is apportioned to the candidate's expenditure.
- **Special provision-** MCC guidelines says that if Prime Minister or Former Prime Minister as star campaigner then the expenditure incurred on security including on the bullet-proof vehicles will be borne by the government and will not be added to the election expenses of the party or the individual candidate.
 - If another campaigner travels with the prime minister or former minister, the individual candidate must bear 50% of the expenditure incurred on security arrangements.
- **Fair election-** These rules ensure that while star campaigners can be effective vote-fetchers, their activities are regulated to maintain fair election expenditure practices.

What are the issues with star campaigning?

- **Expenditure assessment-** Assessing expenditure for star campaigner's rallies often underestimate actual costs it is due to the rate card used by the Election Commission.
- **Inefficiency-** The expenditure assessment challenges is due to EC's rate card as it does not reflect current market rates for various items which results in lower apportionment of expenditure to contesting candidates.
- **Advisory-** Election Commission (EC) issued an advisory to all political parties, emphasizing decorum and issue-based debates during campaigning. Star campaigners were put on notice regarding violations.
- **Inappropriate language-** Star campaigners from various parties have used inappropriate and abusive language against leaders of opposing parties.

Appeals to caste or communal feelings and unsubstantiated allegations have been observed.

- **Madhya Pradesh Assembly By-Election 2020-** The Supreme Court stayed the EC's decision to revoke Kamal Nath's star campaigner status for derogatory remarks against a woman candidate.

What lies ahead?

- RP Act, 1951 could be amended to authorize the EC to revoke the 'star campaigner' status of a leader in case of serious violations of the Model Code of Conduct. This action would prevent party candidates from receiving expenditure relief for their campaigns.
- Such an amendment would encourage a sense of responsibility among star campaigners, ensuring that campaigns maintain necessary decorum and restraint.
- A more robust assessment and apportionment of rally/meeting expenses, especially when star campaigners campaign for specific candidates, would enhance transparency and fairness.
- The reforms for campaigners is essential to promote ethical campaigning practices and uphold the integrity of democracy.

29. The intersection of climate change and human rights

The Supreme Court of India acknowledged the right to protection from climate change impacts as part of the fundamental rights to life (Article 21) and equality (Article 19) enshrined in the Indian Constitution.

- The arguments were a part of a verdict by a three-judge bench headed by the Chief Justice of India DY Chandrachud hearing a case on the conservation of the great India bustard and the lesser florican.
- Climate change can directly affect people's right to life by causing extreme weather events like hurricanes or floods, which can lead to loss of life and property. For example, in low-lying coastal areas, rising sea levels due to climate change can threaten people's homes and livelihoods, forcing them to relocate.
- Climate change can impact water sources, leading to water scarcity or contamination. This affects people's right to clean water and sanitation. In regions where droughts are becoming more frequent due to climate change, communities may struggle to access safe drinking water, leading to health issues.

- Climate change can exacerbate health problems, especially for vulnerable populations. For instance, increased heat waves can lead to heat-related illnesses and deaths, affecting the right to health.
- Climate change-induced events such as sea-level rise, extreme weather events, or desertification can force people to migrate or be displaced from their homes. This intersects with human rights, particularly the right to residence and the right to seek asylum.
- Climate change can disproportionately affect indigenous communities that rely heavily on natural resources for their livelihoods and cultural practices. For instance, changes in ecosystems due to climate change can threaten traditional livelihoods like farming or fishing, impacting indigenous peoples' rights to land, resources, and cultural heritage.

The Supreme Court's interpretation of constitutional provisions concerning climate change:

- Article 48A which mandates environmental protection and Article 51A(g) which promotes wildlife conservation, implicitly guarantee a right to be safeguarded from climate change.
- Article 21 recognises the right to life and personal liberty while Article 14 indicates that all persons shall have equality before the law and the equal protection of laws. These articles are important sources of the right to a clean environment and the right against the adverse effects of climate change.
- In *MC Mehta vs Kamal Nath Case*, 2000, the Supreme Court stated that the right to a clean environment is an extension of the right to life.

Issues/Challenges in balancing climate change mitigation with human rights protection:

- Some climate mitigation measures may conflict with human rights, such as restrictions on land use for conservation projects or displacement due to renewable energy infrastructure development. Finding solutions that minimise negative impacts while maximising benefits is challenging.
- Climate actions like transitioning to renewable energy or implementing carbon pricing can impact access to essential resources like energy, water, and food, especially for marginalised communities.
- Climate-induced migration can strain social systems and lead to conflicts over resources and rights in host communities. Managing migration flows in a way that respects the rights of both migrants and host populations is a multifaceted challenge.
- Balancing efforts to reduce greenhouse gas emissions (mitigation) with investments in adaptation to climate impacts can be challenging. Prioritising

one over the other can have implications for human rights, particularly for communities already facing climate-related risks.

- Climate change is a global issue requiring international cooperation. Balancing national climate goals with global responsibilities and ensuring that climate actions do not undermine the rights of vulnerable communities across borders is a complex task.

30. Strategic significance of Andaman and Nicobar Islands

The new thrust on developing strategic infrastructure, both civilian and military, on the Andaman and Nicobar Islands has been long awaited.

Strategic importance of Andaman and Nicobar Islands

- **Geopolitical location-** Situated at the mouth of the Malacca Strait, the Andaman and Nicobar Islands offer a strategic vantage point for monitoring and controlling maritime traffic passing through one of the world's busiest waterways.
- **Strategic chokepoints-** The islands are positioned near several strategic chokepoints, including the Malacca, Sunda, Lombok, and Ombai-Wetar straits. Control over these chokepoints is essential for maritime security and trade flows in the region.
- **Significance of Maritime boundary-** The islands share maritime boundary with neighbouring countries like Myanmar, Thailand, Indonesia, and Bangladesh, giving India significant influence over maritime activities in these regions under UNCLOS.
- **Military importance-** The development of military infrastructure on the islands enhances India's ability to project power and deter potential threats from the eastern direction, particularly from China.

Andaman and Nicobar Command (ANC), established as a tri-services command in 2001, plays a crucial role in safeguarding India's maritime interests.

- **Economic potential-** The islands offer economic opportunities, including maritime trade, tourism, and fisheries. Developing infrastructure to support these sectors can contribute to islands' economic growth and reduce their dependence on mainland India for essential supplies.

Why the pace of developing strategic infrastructure in the islands has have been slow?

- **Slow realisation-** The unprecedented expansion of China's navy has prompted the island's strategic criticality for India's security.
- **Infrastructure deficit-** The distance from the mainland and the inherent difficulties in developing infrastructure have been cited as reasons for delays in various projects.
- **Complex procedures-** Obtaining environmental clearances, even for small projects, has been a complex process.
- **Land acquisition-** Regulations related to forest conservation and the protection of native tribes have further complicated land acquisition issues.
- **Multi-dimensional project-** Developing the islands and their strategic infrastructure involves coordination across multiple ministries, departments, and agencies. This multi-dimensional effort presents significant challenges.
- **Political impact -** Seeking immediate political gains takes precedence over long term strategic vision.

What should strategic infrastructure development in these islands focus on?

- **Surveillance-** Establishing robust surveillance systems to monitor the vast maritime area stretching 420 nautical miles from north to south is essential to deter potential threats.
- **Maritime infrastructure-** Construction of ports and fuel storages in both the northern and southern groups of the islands is crucial for the operational turnaround of ships without returning to Port Blair.
- **Military infrastructure-** Building military bases, airfields, and naval facilities to enhance defence capabilities and ensure a rapid response to security challenges.
- **Enhance connectivity-** Improving transportation infrastructure, including airports, ports, roads, and ferry services, to facilitate the movement of people and goods within the islands and with the mainland.
- **Economic development-** Promoting economic activities such as tourism, fisheries, and maritime trade through the development of ports, logistics facilities, and tourist amenities.
- **Sustainable development-** Balancing development with environmental conservation by obtaining necessary clearances and implementing eco-friendly practices.
- **Great Nicobar Project-** Accelerating the development of the Galathea Bay transshipment port on Great Nicobar Island is vital. Maritime services such as repair and logistics for both international and Indian shipping need to be established.
- **Incentivise habitation-** Consideration should be given to the planned habitation of uninhabited islands by providing incentives like free or subsidized land to encourage eco-friendly entrepreneurial activities.

- **International cooperation-** Leveraging international partnerships, such as the QUAD and the Indo-Pacific Oceans Initiative (IPOI), to support development efforts and enhance regional stability.

31. Features of Electronic Voting Machine

Recently Supreme Court rejected the plea for 100% verification of Voter Verifiable Paper Audit Trail (VVPAT) slips against the Electronic Voting Machine (EVM) count

- **Aim-** To make the voting process easier, faster, and more accurate.
- **About-** EVM is an electronic device for recording votes that consists of two Units
- **Manufacturing-** It is designed by the Election Commission in collaboration with two Public Sector undertakings -
 - Bharat Electronics Limited, Bangalore (Ministry of Defence) and the
 - Electronics Corporation of India Limited, Hyderabad (Department of Atomic Energy).
- **Power-** EVMs operate on a 7.5-volt alkaline power pack, enabling their use without electricity.
- **Capacity-** Old EVMs can record up to 3840 votes, while newer models (post-2006) have a capacity of 2000 votes
- **Trail of EVM-** In 1982 Electronic Voting Machine was first trailed in the Assembly constituency of **Paravur in Kerala**.
- **Widespread of EVM-** In 2001 EVMs are fully deployed across all booths during the Assembly elections in Tamil Nadu, Kerala, Puducherry, and West Bengal.

By 2004 Lok Sabha elections, EVMs were used across all 543 constituencies.

- **ETPBS-** Electronically Transmitted Post Ballot System is introduced in 2016 allowing service voters like members of the armed forces and government employees on election duty remotely.
- **NOTA-** In 2013, India became the 14th country to institute negative voting through None of the Above (NOTA). However, it is not a “right to reject”.
- **VVPAT-** The Conduct of Elections Rules, 1961 were amended in 2013 to allow for a printer with a drop box to be attached to the EVM.

VVPAT was first used in by-election for Noksen assembly seat in Nagaland.

- **100% VVPAT backing-** The 2019 general elections saw EVMs backed with 100% VVPAT across all constituencies, ensuring an additional layer of verification for voters.

- **VVPAT counting-**As per Indian Institute of Statistics Election Commission in 2018 mandated counting of VVPAT slips of one randomly selected polling station per Assembly constituency.

In 2019 Supreme Court mandates VVPAT counting for five polling stations per Assembly seat.

Benefits of Electronic Voting Machine

- **Booth capturing prevention-**EVMs have curtailed booth capturing by limiting the vote casting rate, making it more time-consuming to cast false votes.
- **Elimination of invalid votes-** The issue of invalid votes, which was a significant problem with paper ballots, has been addressed by EVMs.
- **Environmental benefits-** With a large electorate, EVMs are eco-friendly as they reduce paper consumption.
- **Administrative convenience-** EVMs provide ease for polling officers on election day and enable faster, error-free counting.
- **Random allocation-** EVMs are randomly allocated to booths before polls.
- **Mock polls-** They are conducted to demonstrate the accuracy of EVMs and VVPAT before actual polling begins.
- **Transparency-** Serial numbers of EVMs and the total votes polled are shared with candidates' agents for verification during counting.
- **Security-** The Election Commission of India (ECI) has repeatedly assured that EVMs are standalone devices without external connectivity, thus mitigating the risk of hacking.

Challenges with EVMs

- **Verifiability-** The current practice of matching EVM counts with VVPAT slips in five booths per assembly constituency/segment has been questioned for not being scientifically grounded, which could potentially overlook defective EVMs.
- **Susceptibility to hacking-** Various political parties and civil society activists have raised doubts about the security of EVMs, alleging that they are susceptible to hacking due to their electronic nature.
- **Voter privacy-** The current process allows for the identification of booth-wise polling behaviour by various political parties, they could potentially lead to profiling and intimidation of voters.
- **Lack of transparency-** The inner workings of these machines are not transparent enough, making it difficult to verify the accuracy of the voting process.

- **Lack of accessibility**-EVM poses challenges for certain segments of the population, such as elderly voters or those with disabilities.
- **High cost**- While EVMs are meant to streamline the voting process and reduce costs in the long run, the initial investment in procuring and maintaining these machines can be significant.

What is the Supreme Court verdict on 100% counting of VVPAT slips?

- **Association of Democratic Reforms vs ECI and Anr.** - The petitioners demanded 100% verification of VVPAT slips or return to paper ballots.
- **Secure EVM**- The Supreme Court has reaffirmed the security of EVMs and VVPAT, rejecting pleas for a return to paper ballots.

32. Womens Workforce Participation

Participation of women in the workforce is a constitutional entitlement and denying mothers child care leave violates this, the Supreme Court said Monday.

- A bench of Chief Justice of India D Y Chandrachud and J B Pardiwala was hearing a plea by an assistant professor in the Government College, Nalagarh, who was denied childcare leave (CCL) to attend to her child suffering from a genetic condition.

Key Takeaways:

- Women government employees are eligible for two years of childcare leave (CCL) for two children till they reach the age of 18 years.
- The judgment highlighted that Article 15 of the Constitution not only restricts discrimination based on gender but also enables the states to make special provisions for women.
- In a country where care is perceived as the responsibility of women, the verdict makes it clear that the state and the employer have responsibilities to enable women to join and retain their employment.
- In India, women have little choice but to single-handedly manage the triple burden of housework, care work and paid work.
- Working women often face “marriage penalties” and “motherhood penalties” as they are often temporarily forced to withdraw from the workforce due to marriage and pregnancy. It is no surprise that the female workforce participation in India is barely 37 per cent.
- The Constitution enables the state to make special provisions for women and children.

- The sectoral labour laws that were repealed recently after the introduction of four Labour Codes mandated childcare services on worksites and paid maternity leaves for a section of workers at construction sites, beedi, cigar and other factories, plantations and migrants. These laws mandated crèches on worksites that had a stipulated number of women on the work site.
- The provision went through a transformation under the Labour Code on Social Protection, 2020, where crèches were made a gender-neutral entitlement. It is a significant step in the right direction. The gender-neutral provision underlined care as a “parental” responsibility.
- Care needs to be seen as a collective responsibility of the state, employers, and communities.
- Labour markets need to consider women as primary earners and enable them to take up full employment. There is evidence of high female labour force participation in countries where unpaid care work responsibilities are equally shared.

Additional information

- As per PLFS 2022, 60 per cent women are self-employed and 53 per cent of the self-employed women work as unpaid family helpers. These are intertwined outcomes of lack of opportunities in the labour market and opting for flexible employment near or at home to balance both.
- A decrease in women’s unpaid care work is related to a 10-percentage point increase in women’s labour force participation rate. The IMF has predicted a possible alleviation of 27 per cent in India’s GDP through an equal participation of women in the labour force participation.

33. Supreme Court's directions on the Disabilities Act

The Supreme Court instructed six states to appoint state commissioners under the Disabilities Act.

Key Issues in RPwD Act Implementation:

- **State Commissioners for Persons with Disabilities (PwDs)** have not been appointed in Andhra Pradesh, Chhattisgarh, Jharkhand, Punjab, Tripura, Uttar Pradesh, Andaman and Nicobar, Lakshadweep, and Chandigarh.
 - The role of State Commissioners is vital for monitoring fund usage and ensuring effective **RPwD Act implementation**.
- A **State Fund for PwDs** under Section 88 has not been created in Gujarat, Himachal Pradesh, Kerala, Mizoram, West Bengal, Delhi, Daman Diu, Jammu and Kashmir, and Ladakh.

- **Special Courts** and Special Public Prosecutors have not been appointed in Arunachal Pradesh and West Bengal.
 - These courts are essential for speedy trials in cases involving PwDs.
- Public prosecutors have not been appointed in special courts in Chhattisgarh and Daman Diu.
- **Assessment boards** for issuing disability certificates and providing necessary support are missing in several regions.
- An authority for **limited guardianship** has not been established.
 - This is crucial for enabling joint decision-making between the guardian and the PwD based on mutual understanding and trust.

RPwD Act 2016:

- The **Rights of Persons with Disabilities (RPwD) Act** was enacted in April 2016.
 - It aims to enforce the rights and promote the welfare of persons with disabilities across India.
- The Act aligns with the **United Nations Convention on the Rights of Persons with Disabilities**.
 - It ensures comprehensive measures are in place to support this population segment.
- It is administered by the **Ministry of Social Justice & Empowerment (MoSJ&E)**.
 - The ministry oversees the Act's implementation and adherence.

Key Features of the RPwD Act:

- The Act covers 21 disabilities, including a range of physical and intellectual disabilities, mental illness, blood disorders, and neurological conditions.
- It ensures the right to **free education** for children aged 6 to 18 years who have benchmark disabilities.
 - This aids their integration into mainstream educational systems.
- The Act specifies reservations:
 - **5% reservation** in government and government-aided higher educational institutions.
 - **4% reservation** in government jobs.
- Penalties are established for offences against persons with disabilities.
 - These serve as a deterrent against discrimination and harm.
- Each state is required to form a committee focused on disability issues.
 - This enhances localized support and research for the disabled.
- The Act outlines the salary, allowances, and terms of service for the **State Commissioner**.

- This highlights the support structure designed to uphold the rights of disabled persons.

34. UK's Safety of Rwanda (Asylum and Immigration) Bill

The United Kingdom Parliament passed the **Safety of Rwanda (Asylum and Immigration) Bill**.

Key Highlight of the Rwanda Asylum Bill:

- This legislative move comes as the UK Parliament identifies Rwanda as a **"safe third country."**
- The bill is specifically designed to address the significant increase in migrants arriving by small boats, a number that has escalated from 299 in 2018 to **45,774 in 2022.**
- The bill aims to manage the sharp rise in migrant arrivals effectively.
- It responds to a Supreme Court ruling that raised questions about Rwanda's adequacy as a host country, due to human rights concerns.
- A new treaty between the UK and Rwanda, signed in December 2023, has introduced **enhanced protections for migrants.**

Concerns and Criticism:

- The legislation challenges existing legal frameworks, **compelling courts to regard Rwanda** as a safe destination despite previous rulings.
- Human rights advocates are alarmed about the **potential for mistreatment of asylum seekers** in Rwanda and the risk of violating the principle of non-refoulement, which prevents returning individuals to a country where they may face harm.
- The **UNHCR** has criticized the approach, viewing it as treating asylum seekers as commodities. Moreover, opposition parties have labelled the plan both costly and ineffective.
- Both the **UK Supreme Court and the European Court of Human Rights (ECHR)** have reservations about Rwanda's capacity to ensure humane treatment for asylum seekers.

35. Living wills implementation lags in India

In early March this year, 30 people in Thrissur in Kerala executed living wills.

- The Supreme Court's 2018 order on *Passive Euthanasia*, wherein it recognized the '*Right to die with dignity*' as a fundamental right and an aspect of *Article 21 (right to life)* of the Constitution.
- However, the people wanting to get a "*living will*" registered were facing problems due to cumbersome guidelines, prompting a reconsideration by the apex court.
- A Constitution Bench, led by Chief Justice of India Dipak Misra, in three concurring opinions, upheld that the fundamental right to life and dignity includes the '*Right to Refuse Treatment and Die with dignity*'.

Challenges in Implementation :

- **Decision-Making Process:** Even if a living will is created, its implementation is not automatic. Decisions on withholding or withdrawing treatment require certification by primary and secondary medical boards, posing logistical challenges, especially in hospitals without designated boards.
- **Ambiguities and Discomfort:** Ambiguities in guidelines, discomfort with end-of-life care topics, and unclear legal definitions contribute to the hesitancy among officials to implement the Court's directives without clear instructions from higher authorities.
- **Legal Ambiguity:** Indian law lacks a clear definition of 'next of kin', leading to potential disputes among family members about medical decisions for terminally ill patients.
- **Barriers to End-of-Life Decisions:** A survey of intensive care doctors reveals a general belief that end-of-life decisions are fraught with legal implications, serving as a significant barrier to making such decisions in the ICU.
- **Regional Disparities in India:**
 - **Haryana:** While some states like Haryana have issued directions to follow the judgment, they have not provided essential guidance or protocols for implementation.
 - **Odisha:** In contrast, Odisha has taken a more thorough approach by forming a committee of experts to develop detailed draft orders for implementing the judgment, setting a potential example for other states.

Conclusion: The central government could help bridge the gap in expertise by developing and publishing model orders and protocols to provide states with confidence and guidance in effectively implementing the judgment.

GS 3 : Economy, Science and Technology, Environment

1. Elephant Corridors in India

The Ministry of Environment Forest and Climate Change recently directed Arunachal Pradesh and Assam to prepare a proposal to notify the Dulung-Subansiri elephant corridor.

How elephant corridor is designated in India?

- **Wildlife Protection Act, 1972-** It empowers the state governments to declare areas that link protected regions as “conservation reserves” under Section 36A.
- **Community reserves-** It can also be designated as “community reserves” according to Section 36C of the wildlife protection act, 1972.
- **Role of ministry-** The Ministry of Environment, Forest and Climate Change collaborates with state forest departments to identify and validate elephant corridors.
- **State level designation-** State governments play a crucial role in demarcating and designating these corridors as “ State Elephant Corridors”.
- **Legal protection-** These designations subject the corridors to legal protection under relevant laws, such as the Wild Life (Protection) Act, 1972, and the Environment Protection Act, 1986.
- **National Elephant Corridor Project-** It aims to ensure and manage these vital pathways for elephant movement, this project identifies and conserves corridors to ensure the long term survival of Asian elephants within India’s political boundaries.

Why India needs elephant corridor?

Elephant corridor is that it is a strip of land that facilitates the movement of elephants between two or more viable habitat patches.

- **Legal protection-** The corridors will legally protected, potentially designating it as a wildlife sanctuary or conservation reserve.

- **Reduce habit isolation**-It allow elephants to continue their nomadic mode of survival, despite shrinking forest cover, by facilitating travel between distinct forest habitats.
- **Keystone species**- Supreme Court in elephant corridor case said that its State's duty to protect a "keystone species" like elephants, which are immensely important to the environment.

Supreme Court upheld the Tamil Nadu government's authority to notify an 'elephant corridor' and protect the migratory path of the animals through the Nilgiri biosphere reserve.

- **Forest conservation**- Animal paths are blocked as forests have been turned into farms and unchecked tourism, these elephant corridors would check the negative impacts on wildlife habitats and migration routes.
- **Man-animal conflict**- Animals are forced to seek alternative routes resulting in increased elephant-human conflict, these particularly affect animals that have large homes like elephants, a dedicated elephant corridor would reduce the fatalities.

Kerala is the first state to declares man-animal conflict as a state-specific disaster.

- **Forest regeneration**- They would help regenerate forests on which other species, including tigers depend.
- **Preserve migratory corridors**- The negative impacts of forest fragmentation on ecosystems highlight the necessity of preserving and restoring migratory corridors to mitigate these effects.
- **Hydropeaking risks**- Worldwide Institute of India report highlighted the dangers of hydropeaking in lower Subansiri hydroelectric project which could lead to flash floods and pose threat to elephants, particularly calves.

2. India Employment Report 2024

The India Employment Report 2024, prepared jointly by the Human Development and the International Labour Organization, was released recently.

- It has analysed trends and patterns of the Indian labour market for two decades, including the COVID-19 years, and listed the "emerging characteristics of the employment challenges now confronting the economy as well as the impact of growth on employment."

Key findings

- Basic long-term feature of the employment situation in the country continues to be insufficient growth of the non-farm sectors and the ability of these sectors to absorb workers from agriculture.
- India's working-age population (aged 15–59) increased from 61% in 2011 to 64% in 2021 and is projected to reach 65% in 2036. About 7-8 million young people are added each year to the labour force.
- The authors warn that unemployment in the country is “predominantly a problem among youth”, especially those with a secondary level of education or higher, and that it has intensified over time.
- In 2022, the share of unemployed youth in the total unemployed population was 82.9%,” report noted, adding that the share of educated youth among all unemployed people also increased, from 54.2% in 2000 to 65.7% in 2022.
- Also, among the educated (secondary level or higher) unemployed youth, women accounted for a larger share (76.7%) than men (62.2%).
- There is a significant gender gap in the labour market, with low rates of female labour force participation. The gender gap in the LFPR has remained almost consistent over the past two decades.
- In 2022, the LFPR of young men (at 61.2%) was almost three times higher than that of young women (at 21.7%), and the gender gap was similar in both rural and urban areas.
- The ILO and IHD stated that the jobs remained low-productive and low-earning. Real wages and earnings showed a decline or had stagnated.
- While India's large young workforce is a demographic dividend, the report noted that they don't appear to have the skills to deliver – with 75% of youth unable to send emails with attachments, 60% unable to copy and paste files, and 90% unable to put a mathematical formula into a spreadsheet.

Reports Recommendations:

- Make production and growth more employment-intensive.
- Improve the quality of jobs.
- Make systems for skills training and active labour market policies more effective.
- Bridge the deficits in knowledge on labour market patterns and youth employment.
- Integrating employment creation with macro and other economic policies to boost productive non-farm employment.
- Micro, small and medium-sized enterprises must be supported and decentralised.
- The ILO and IHD recommended that measures such as crafting policies to boost women's participation in the labour market including larger provision for institutional care facilities, adaptable work arrangements, improved

public transport, improved amenities and enhanced workplace safety must be taken in mission mode to address this gender gap in employment.

3. X- CLASS SOLAR FLARE

Earth was recently hit by an X-class solar flare that was strong enough to ionize part of the planet's atmosphere.

- This intense solar outburst was detected by satellites from the National Oceanic and Atmospheric Administration (NOAA), specifically their Space Weather Prediction Center.

X- CLASS SOLAR FLARE

- The Solar flares are massive eruptions of charged particles on the sun. They emit intense bursts of electromagnetic radiation.
- These flares come in various intensities, with smaller A-class and C-class flares denoting relatively minor events. In contrast, the stronger M-class flares can amplify the auroras visible on Earth.
- The X-class flares are the most powerful type of solar flares.

Effects X-class Solar Flares on Earth

Geomagnetic Storms:

- X-class flares release an immense amount of energy, including charged particles and electromagnetic radiation.
- When these particles reach Earth, they interact with our planet's magnetosphere, causing geomagnetic storms.
- During a severe geomagnetic storm, the magnetosphere weakens temporarily, allowing solar radiation to penetrate deeper into the atmosphere.

Satellite Disruption:

- Long-lasting radiation storms from X-class flares can harm satellites orbiting Earth.
- Satellites may experience malfunctions or even permanent damage due to increased radiation exposure.
- Airline passengers flying near the poles during such events may receive small radiation doses.

Global Transmission Problems and Blackouts:

- X-class flares have the potential to create global transmission problems.
- Intense bursts of radiation can interfere with communication systems, including radio signals and satellite communication.
- In extreme cases, widespread blackouts could occur if critical infrastructure is affected.

Solar Maximum and Solar Cycle:

- The occurrence of X-class flares is a clear sign that the sun is nearing its solar maximum.
- Solar maximum is part of the sun's roughly 11-year cycle of activity.
- During this phase, X-class flares become more common, posing challenges for Earth's technology and space operations.

4. 90 Years of RBI

The Reserve Bank of India (RBI) recently celebrated its 90th year in Mumbai.

What is the history of RBI?

- **About-** RBI is India's central banking institution, which controls the monetary policy of the Indian rupee.
- **Hilton Young Commission-** RBI was set up based on the recommendations of the Royal Commission on Indian Currency and Finance, which was appointed by Lord Reading, then viceroy of India.
- **Established year-** April 1, 1935 in accordance with RBI Act, 1935.
- **Headquarters-** It is moved from Calcutta to Mumbai in 1937.
- **Nationalisation-** The bank was nationalised (fully owned by government) in 1949.

What are the functions of RBI?

- **Monetary authority-** It controls the supply of money in the economy to stabilize exchange rate, maintain healthy balance of payment, attain financial stability, control inflation, and strengthen banking system.
- **Issuer of currency-** RBI is the sole authority to issue currency, it also takes action to control the circulation of fake currency.
- **Issuer of banking license-** As per Section 22 of Banking Regulation Act, 1949 every bank has to obtain a banking license from RBI to conduct banking business in India.

- **Banker to the government-** It acts as banker to both the Central and the State governments, by providing short term credit and advises the government on banking and financial subject
- **Banker's Bank-** RBI is the bank of all banks in India as it provides loan to banks, accept the deposit of banks, and rediscount the bills of banks.
- **Lender of last resort-** The banks can borrow from the RBI by keeping eligible securities as collateral at the time of need or crisis, when there is no other source.
- **Act as clearing house-** For settlement of banking transactions, RBI manages 14 clearing houses. It facilitates the exchange of instruments and processing of payment instructions.
- **Custodian of foreign exchange reserves-** Manages foreign exchange reserves, administers Foreign Exchange Management Act (FEMA), and maintains exchange rate stability.
- **Regulator of economy-** It controls the money supply in the system, monitors different key indicators like GDP, Inflation, etc.,
- **Regulator and supervisor of Payment and Settlement Systems-** The Payment and Settlement Systems Act of 2007 (PSS Act) gives RBI oversight authority for the payment and settlement systems in the country.
- **Developmental role-** RBI promotes development of quality banking system, ensures credit availability to productive sectors, establishes financial infrastructure, expand access to financial services and promotes financial literacy.
- **Exchange manager and controller-** Represents India in international monetary organizations like IMF, authorizes commercial banks as dealers.
- **Banking Ombudsman Scheme-** RBI introduced the scheme in 1995 to address complaints against banks, allows complainants to file grievances and appeal decisions.
- **Banking Codes and Standards Board of India (BCBSI) -** To measure the performance of banks against Codes and standards based on established global practices, the RBI has set up the BCSBI.

What are the challenges of RBI?

- **Global financial crises-** RBI has had to navigate through various global financial crises, such as the Asian financial crisis (late 1990s) and the global financial crisis of 2008 which posed challenges to India's financial stability and required coordinated policy responses from the RBI and other authorities.
- **Domestic disruptions-** During demonetization in 2016 certain currency notes were invalidated overnight which presented significant logistical and economic challenges.

- **COVID-19 pandemic-** RBI implemented various measures to support the economy, such as liquidity injections, regulatory relaxations, and interest rate cuts, to mitigate the economic impact of the pandemic.
- **Bad loans-** Non-Performing Assets (NPAs) or bad loans have been a persistent challenge for the Indian banking sector, RBI has implemented measures to address this issue, including asset quality reviews, prompt corrective action frameworks, and resolution mechanisms like the Insolvency and Bankruptcy Code (IBC).
- **Inflation management-** India has experienced periods of high inflation, RBI implemented monetary policy measures to manage inflation.
- **Crypto regulations-** Despite a Supreme Court ruling overturning the RBI's ban on cryptocurrency trading, regulatory clarity on crypto remains ambiguous

5. ISRO's NICES Programme Combatting Climate Change

The National Information System for Climate and Environment Studies (NICES) Program has extended invitations to Indian researchers to contribute to climate change mitigation efforts.

NICES Program

- The NICES Programme is operated by the *ISRO and the Department of Space*.
- It was launched in **2012**.
- It operates within the framework of the *National Action Plan on Climate Change*.
- NICES aims to enhance the *participation of Indian researchers in addressing climate change*-related challenges through multidisciplinary scientific investigations.
- **Focus Areas:** Potential areas for project submission include Space-based Essential Climate Variables (ECVs) and Climate Indicators, Climate Change Challenges, Weather Extremes, and Climate Services.

Activities held under NICES Program

- NICES invites project proposals from Indian *scientists, academicians, and researchers* affiliated with various governmental organizations, recognized institutions, universities, and departments.
- Project proposals should *address climate change-related challenges*.
- These projects are expected to be *completed within 3 years* from the date of sanction.

Objective and Functionality

- The primary objective of the NICES Programme is to generate and disseminate long-term *Essential Climate Variables (ECVs)* derived from *Indian and other Earth Observation (EO) satellites*.
- These variables, spanning terrestrial, oceanic, and atmospheric domains, are crucial for characterizing Earth's climate and monitoring changes over time.

Achievements and Impact:

- Since its inception in 2012, NICES has **developed over 70 geophysical products** meeting stringent quality standards.
- These products have been instrumental in *documenting climate change and its impacts*, contributing to scientific understanding and evidence-based decision-making.

6. Solar surge: Moving away from imported solar panels

The government is finally bringing into effect the policy of an **Approved list of Models and Manufacturers (ALMM)** that will discourage solar power project developers from **relying on imported panels**.

About Approved Models and Manufacturers of Solar Photovoltaic Modules Order, 2019:

- **Aim:** To boost domestic manufacturing of solar panels by registering only those made with domestically manufactured cells, wafers, and polysilicon.
- **Compulsory Registration:** The order mandates compulsory registration for solar PV module and cell manufacturers, ensuring they meet certain quality and production standards.
- **Lists:** LIST-I for solar PV modules and LIST-II for solar PV cells.
 - Only listed models and manufacturers in these lists are considered approved for use in various government projects and schemes.
- **Eligibility Criteria:** To be included in the lists, manufacturers must undergo inspections and meet specific criteria set by the National Institute of Solar Energy (NISE) to ensure the products are genuinely manufactured and *not imported*.

This order ensures the reliability of solar PV products used in installations, promotes domestic manufacturing, and aligns with the government's initiatives for renewable energy adoption and energy security.

Efforts made by the Government to promote domestic Solar Manufacturing:

- **Import Restrictions:** The creation of the Approved Models and Manufacturers list was aimed at restricting imports from China, which dominates a significant portion of the global solar supply market.
- **Ambitious Renewable Energy Targets:** India aims to source about 500 GW of its electricity from non-fossil fuel sources by 2030, with at least 280 GW coming from solar power. This necessitates adding at least 40 GW of solar capacity annually until 2030. So there is need to focus on indigenous solar project

Challenges ahead:

- **Unrealistic Targets:** Despite ambitious targets, India's solar capacity additions have been relatively low in recent years, attributed in part to the COVID-19 pandemic. The country aims to ramp up installations to between 25 GW and 40 GW annually.
- **Reliance on Imports:** A significant fraction of India's solar installations is met by imports, which affects domestic panel manufacturers who must pay for government certification but lose orders to cheaper Chinese panels. For example surge in Solar panel import in FY 24 around \$1,136.28 million from FY23 imports \$943.53 million

Conclusion: India's ALMM policy aims to boost domestic solar manufacturing, aligning with ambitious renewable energy targets. Address challenges like meeting targets and reducing reliance on imports through strategic planning and support.

7. CPCB and Compensation received by the CPCB

The CPCB (Central Pollution Control Board) recently reported to the NGT (National Green Tribunal) that only 20% (Rs 156.33 crore) of the collected funds (Rs 777.69 crore) were utilized.

- The funds were spent on a variety of activities including upgrading laboratory equipment, field visits, strengthening of the air quality monitoring network, paddy straw management, and environmental remediation.

Compensation received by the CPCB:

- **Compensation received by the CPCB** falls under two main categories: (i) **Environment Protection Charge (EPC)** and (ii) **Environmental Compensation (EC)**.

- The EPC, a **1% charge** on specific new diesel vehicles in Delhi and NCR as per a Supreme Court order.
- The EPC is used for **air quality improvement** in Delhi-NCR through R&D, vehicular pollution control, health impact studies, and specific pollution control projects in Delhi-NCR and Punjab.
- The EC was based on the "**Polluter Pay Principle**" and ordered by the NGT.
- The EC funds rejuvenation and protection of the environment through strengthening **laboratories** or **monitoring** networks, compliance projects and studies per NGT orders, capacity building of **pollution control boards**, and allowance payments.

8. Black Carbon Emission Reduction in India

As India moves towards **long-term decarbonization**, there is an urgent need for prioritizing black carbon reduction through initiatives such as the **PM Ujjwala scheme**.

Black Carbon:

- Black carbon is the **dark, sooty material** emitted alongside other pollutants when biomass and fossil fuels are not fully combusted.
- It contributes to **global warming** and studies show a direct link between exposure to black carbon and a higher risk of **heart disease, birth complications, and premature death**.
- Black carbon, commonly known as **soot**, is a component of **fine particulate air pollution (PM2.5)**.
- It is formed by the **incomplete combustion** of wood and fossil fuels, creating carbon dioxide (CO₂), carbon monoxide, and **volatile organic compounds**.
- Black carbon warms the atmosphere because it is very effective at absorbing light.
- It **exacerbates** the warming of the air and surfaces in regions where it is concentrated, altering **weather patterns and ecosystem cycles**.
- Black carbon lasts only days to weeks in the atmosphere but has significant direct and indirect impacts on the **climate, snow and ice, agriculture, and human health**.
- Recent estimates have indicated that **mitigating residential emissions** will avoid more than 6.1 lakh deaths per year from **indoor exposure to air pollution**.

Sources of black carbon:

- **Black carbon** is produced through both **natural and anthropogenic** sources.

- The proliferation of **industrial activity** over the last two centuries has prompted a sharp increase in black carbon concentrations in the **Earth's atmosphere** today.
- It is created through the **incomplete combustion of fossil fuels** such as oil, coal, and gas and biofuels such as wood, peat crops, and other fuel sources.
- Some of the **biggest sources of black carbon emissions** include diesel engines in vehicles, cooking stoves, wood-burning furnaces and forest fires.

Sectors contributing to black carbon emissions:

- The chief culprit for black carbon emissions can vary from **region to region** around the globe.
- The transportation industry is by far the largest emitter in the developed world.
- **Residential combustion of coal and biofuel** accounts for a much bigger share of emissions in the developing world (including Asia and Africa).

India's efforts for Black Carbon Reduction:

- At the **COP26 climate talks in Glasgow** in 2021, India pledged to achieve net-zero emissions by 2070, positioning itself as a frontrunner in the race to carbon neutrality.
- India had installed a **renewable energy capacity** of over 180 GW by 2023 and is expected to meet its target of **500 GW by 2030**.
- While carbon dioxide mitigation strategies will **yield benefits** in the long term, they need to go hand-in-hand with efforts that provide short-term relief.
- Most black carbon emissions in India arise from burning biomass, such as cow dung or straw, in **traditional cookstoves**.
- According to a **2016 study**, the residential sector contributes **47% of India's total black carbon emissions**.
- Industries contribute a further **22%**, **diesel vehicles 17%**, **open burning 12%**, and other sources 2%.
- **Decarbonization** efforts in the industry and transport sectors in the past decade have yielded reductions in black carbon emissions, but the residential sector remains a challenge.

Impact and challenges of Pradhan Mantri Ujjwala Yojna (PMUY):

- In May 2016, the Government of India initiated the PMUY to provide **free liquefied petroleum gas (LPG) connections** to households below the poverty line.

- The primary objective was to make clean cooking fuel available to rural and poor households and reduce their dependence on traditional cooking fuels.
- This established infrastructure to go with LPG connections, including **free gas stoves, deposits for LPG cylinders, and a distribution network.**
- The programme played a vital role in reducing black carbon emissions, as it offers a cleaner alternative to **traditional fuel consumption.**
- The programme has provided connections to over **10 crore households across India.**
- In 2022-2023, 25% of all **PMUY beneficiaries** (2.69 crore people) availed either zero LPG refill or only one LPG refill.
- An average PMUY beneficiary household **consumes only 3.5-4 LPG cylinders** per year instead of the six or seven a regular **non-PMUY household uses.**
- About **half of all the energy needs** of a PMUY beneficiary household are still met by traditional fuels, which have **high black carbon emissions.**
- A shortage of LPG and higher **usage of traditional fuels** also affect women and children disproportionately.
- They are **more prone to higher levels of indoor air pollution**, causing many health issues and leading to premature deaths.
- The key to **enhancing the quality of life** in these areas lies primarily in securing access to **clean cooking fuels.**
- With **rapid increase in LPG prices** over the last five years, the cost of a 14.2-kg LPG cylinder, even with an additional subsidy, is still about ₹600 per cylinder.
- Most PMUY beneficiaries find the **price too high**, more so since **cow dung, firewood, etc.** are 'free' alternatives.
- The government has estimated that about **₹12,000 crore will be spent on PMUY subsidies** in 2024-2025, which continuously increased each year since the **scheme's inception.**
- The problem of **low refill rates** will persist if availability issues are not addressed, while lack of **last-mile connectivity** in the LPG distribution network.
- One potential solution to this issue is the local production of **compressed bio-methane (CBM) gas** by composting biomass.
- CBM is a much cleaner fuel with lower black-carbon emissions and investment.
- **Panchayats** can take the initiative to produce CBM gas locally at the village level, ensuring every **rural household** can access clean cooking fuel.

9. ISRO's role in India's private space sector boom

The Indian Space Research Organisation (ISRO) is expanding its missions with private sector involvement boosted by 100% Foreign Direct Investment in the space sector.

What are the steps taken by India to promote private participation in space sector?

Antrix corporation Ltd.

- **Launch year-** 1992.
- **Administrative control-** It is a wholly owned Government of India Company under Department of Space (DoS).
- **Marketing arm of ISRO-** It is the commercial and marketing arm of ISRO.
- **Primary role-** To promote, market, and deliver ISRO's commercial products to international clients.
- **Responsibility-** It serves as a conduit between ISRO and private industry partners, facilitating technology transfer, assessing financial viability, and developing industrial capabilities within the Indian space sector.

New Space India Limited (NSIL)

- **Launch year-** 2019
- **Administrative control-** It is a schedule A category company under Department of Space (DoS).
- **Role-** - It will be responsible for commercialising space technologies and platforms created through public expenditure.
- **Major business areas-** PSLV production, SSLV manufacturing, launch services, satellite based services, satellite building and subsystems.
- **Commercialisation-** It will help in transferring technologies developed by ISRO to industries for commercialisation.

IN SPACe

- **Launch year-** 2020
- **About-** Indian National Space Promotion and Authorisation Centre is a single window autonomous body established under Department of Space.
- **Aim-** To create an eco-system of industry, academia and start-ups and to attract major share in the global space economy.
- **Role-** The Centre is responsible to promote enable authorize and supervise various space activities of the Non- Government Entities (NGEs).

National Geospatial Policy, 2022

- **About-** The policy issued guidelines for private companies to acquire geospatial data and maps from government agencies without licenses, permissions, or clearances, except for certain categories.
- **Aim** - To develop a geospatial ecosystem, democratize data, and strengthen integrated interfaces for digital data with location.
- **Promote private sector-** The policy promotes private sector participation in collecting geospatial data and allows the Survey of India to maintain high-resolution orthoimagery.

India Space Policy, 2023

- **Vision-** To enable, encourage and develop a flourishing commercial presence in space economy.
- **NGEs-** It shall be allowed to undertake end-to-end activities in space sector through establishment and operation of space objects, ground-based assets and related services, such as communication, remote sensing, navigation, etc.,
- **IN-SPACE-** It will be the single window clearance and authorisation agency providing guidelines and regulations for NGEs.

10. Nuclear Fusion: KSTAR reaches a temperature of 100 million Celsius

- South Korean scientists at the Korea Institute of Fusion Energy (KFE) achieved a significant milestone by producing temperatures of **100 million Celsius for 48 seconds** in the Korea Superconducting Tokamak Advanced Research (KSTAR) fusion reactor.
- KSTAR maintained the **high confinement mode (H-mode) for over 100 seconds**, demonstrating stability in plasma conditions crucial for sustained fusion reactions.
- This is a world record.

Nuclear Fusion

- Nuclear fusion involves **fusion of hydrogen and other light elements** to release massive energy, akin to the process that powers the Sun and stars.
- It is a process where two light atomic nuclei combine to form a heavier nucleus, releasing a **large amount of energy** in the process.
- This occurs under **extremely high temperatures**, typically in the range of tens of millions of degrees Celsius, and pressure, similar to those found in the core of stars.
- In a tokamak reactor, hydrogen variants are heated to extreme temperatures **to create a plasma, mimicking conditions found in the Sun's core.**

- **1 kg of fusion fuel contains about 10 million times as much energy as a kg of coal, oil or gas.**

Significance of KSTAR's achievements

- Achieving sustained **fusion reactions in laboratory conditions** unlocks the potential for unlimited, zero-carbon electricity generation.
- By extending the duration of high-temperature fusion, scientists aim to **sustain plasma temperatures of 100 million degrees for 300 seconds by 2026**, pushing the boundaries of fusion research.
- Progress in fusion research at KSTAR contributes to international efforts, **supporting projects like the International Thermonuclear Experimental Reactor (ITER) in France.**

Benefits offered by Nuclear Fusion Energy

- **Clean Energy:** Fusion reactions produce minimal radioactive waste compared to nuclear fission, which generates long-lived radioactive waste. Fusion also emits no greenhouse gases, making it an environmentally friendly energy source.
- **Safety and Controlled Nature:** Fusion reactions are inherently safer than nuclear fission reactions. Fusion reactors have a lower risk of accidents and do not produce runaway chain reactions like fission reactors.
- **Energy Security:** Fusion provides a reliable and secure source of energy, reducing dependence on fossil fuels and volatile energy markets. It offers a sustainable solution to meet global energy demand.
- **High Energy Density:** Fusion reactions release a vast amount of energy compared to other energy sources. This high energy density makes fusion power compact and efficient, enabling it to meet large-scale energy needs.
- **Scalability:** Fusion reactors can be designed to scale up or down to meet varying energy demands. They can serve as base-load power plants or complement renewable energy sources, providing flexibility in the energy mix.
- **Minimal Environmental Impact:** Fusion power plants have a small footprint and do not require large mining operations or fuel transportation, reducing their environmental impact. They also produce no air pollution or carbon emissions during operation.

11. Nuclear Energy Summit

Brussels hosted the first-ever **Nuclear Energy Summit**, organized by the **International Atomic Energy Agency (IAEA)** and Belgium.

Nuclear Energy Summit:

- The summit focused on promoting nuclear energy, recognized at the **COP28 in 2023**.
- It saw participation from over **30 nations, including India**, and the **European Union (EU)**.

Significance of Nuclear Energy

- Nuclear energy was highlighted at **COP28** as essential for achieving climate goals.
- **22 world leaders** advocated for tripling nuclear capacity by **2050**.
- Compared to solar and other renewables, nuclear power emits **four times less carbon**, providing a steady energy supply, low operational costs, and requiring less land.
- It contributes to **25%** of the world's low-carbon electricity.

Nuclear Energy Challenges

- However, nuclear energy faces hurdles like safety concerns, notably post the **Fukushima disaster**, risks of cyber-attacks, high initial investments, and prolonged project timelines.

Atoms4NetZero Programme:

- Launched at **COP27**, the **Atoms4NetZero Programme** endorses nuclear energy for achieving net-zero emissions.
- It offers energy scenario modelling to **support decision-making** and is a key part of the decarbonization strategy.

International Atomic Energy Agency (IAEA):

- **Founded in 1957**, the IAEA operates autonomously within the UN system, promoting the safe and peaceful use of nuclear technology.
- Its goal is to encourage the use of nuclear technology safely, securely, and peacefully.

- The IAEA plays a crucial role in ensuring non-proliferation under the **Nuclear Non-Proliferation Treaty (NPT)**, including the additional Protocol for peace verification.
- With **178 member states, including India**, it serves as the central forum for scientific and technical cooperation in the nuclear field.
- The IAEA maintains its independence, with its treaty, and reports to the **UN General Assembly and Security Council**.
- Its functions include:
 - Promoting nuclear safety and security,
 - Implementing safeguards against the diversion of nuclear weapons, and
 - Supporting scientific exchange and capacity building for responding to nuclear/radiological incidents.

12. Government e-Market (GeM)

The Government e-Market (GeM) has achieved a significant milestone by crossing the Rs 4 lakh crore mark in procurement for the current fiscal year, marking a historic achievement.

GeM:

- GeM is an **online platform** established to streamline the **purchase of goods and services by all government agencies**.
- **Launched in 2016** by the **Ministry of Commerce and Industry**, GeM represents a bold initiative aimed at revolutionizing procurement processes across ministries, departments, public sector undertakings, and other apex autonomous bodies of the **Central Government**.
- It serves as an **open and transparent procurement platform**, replacing the **Directorate General of Supplies and Disposals (DGS&D)**.
- It operates as a **completely paperless, cashless, and system-driven e-marketplace**, facilitating procurement with **minimal human interface**.
- **Sellers on GeM** are mandated to display the '**country of origin**' on products, ensuring transparency in purchasing decisions.
- Mandated by Rule 149 of the General Financial Rules 2017, **GeM is the designated portal for procurement** by ministries, government agencies, and Public Sector Enterprises, with state governments also encouraged to utilize the platform.

Objective:

- GeM operates on three key pillars: **Efficiency, Transparency, and Inclusiveness**, making business transactions **quick, easy, and accessible to all**.
- It **fosters inclusivity** by **allowing anyone to conduct business on the platform**, ensures **efficiency in operations**, and **promotes transparency** in business practices.
- It aims to **enhance openness, effectiveness, and speed in public procurement**, offering various procurement methods like direct purchase, electronic bidding, and reverse auctions.
- It **enables economies of scale, efficient price discovery, and dissemination of best practices**.

Advantages of GeM:

For Buyers:

- **Extensive product listings for various categories** of goods and services.
- **Search, compare, select, and purchase** goods and services online as needed.
- **Transparent and easy procurement** process.
- **Continuous vendor rating system**.
- **User-friendly dashboard** for buying and monitoring supplies and payments.
- **Hassle-free return policy**.

For Sellers:

- **Direct access to all government departments**.
- **Simplified marketing efforts** with a **one-stop shop platform**.
- **Access to bids and reverse auctions** for products/services.
- Facility for suggesting new products.
- Dynamic pricing based on market conditions.
- **Seller-friendly dashboard** for selling and monitoring supplies and payments.
- Consistent and uniform purchase procedures.

13. Basel III Endgame

The US Federal Reserve recently announced stricter bank capital requirements known as the “Basel III endgame” proposal.

Bank Capital

Bank capital is a measure of **bank shareholders’ investment** in the business.

- In contrast to deposits or money a bank has borrowed, capital **does not have to be paid back**.
- In other words, it is a **cushion or buffer that protects a bank from insolvency** – and, thus, reduces the risk that a bank failure triggers system-wide financial instability.
- A bank that has sufficient capital can cover customers' deposits even if the loans it has made aren't repaid or if its investments drop in value.

Basel Norms

- **Basel, Switzerland**, hosts the **Bureau of International Settlement (BIS)**, fostering collaboration among central banks to establish global banking standards.
- The **Basel Committee on Banking Supervision (BCBS)**, established in 1974 formulates broad supervisory guidelines known as the Basel framework.
- Its purpose is **to ensure banks maintain adequate capital** to meet obligations and absorb losses.
- **India has adopted Basel** standards to align its banking practices with global norms.

Proposed Changes under Basel III Endgame

- **Expansion of Scope:** The proposal aims to extend the strictest risk-based capital approach to more banks, lowering the asset threshold from \$700 billion to \$100 billion. This would encompass around 37 large banks in the U.S.
- **Standardized Measure for Capital Requirements:** Regulators propose curtailing banks' use of internal models to calculate capital requirements for loans, advocating for a standardized measure for all banks to ensure uniform risk assessment.
- **Increased Capital for Trading and Operational Risks:** The proposal mandates higher capital reserves for risks linked to trading activities and operational challenges, requiring banks to utilize standard models for risk assessment instead of internal ones.
- **Changes to Capital Calculations for Portfolios:** Banks with assets exceeding \$100 billion must reflect gains and losses in portfolios categorized as "available for sale" in their capital calculations, aiming for a more precise depiction of a bank's risk exposure.

Challenges created by the new Norms

- **Operational Risks:** A substantial portion of the proposed capital increment targets banks' operational risks, encompassing potential losses arising from internal processes, people, systems, or external events.
- **Non-Traditional Banking Activities:** Entities engaged in trading, market-making, wealth management, and investment banking, will face more pronounced capital requirements due to altered risk assessment and operational risk calculations.
- **Industry-specific Concerns:** Additionally, specific industries, like renewable energy, anticipate repercussions, fearing that increased capital requirements could undermine the effectiveness of tax incentives for projects targeting climate change.

Arguments in Favor of Increasing Capital

- **Financial Stability:** Proponents argue that heightened capital requirements are imperative for safeguarding financial stability, averting bank failures, and minimizing the need for government bailouts.
- **Prudent Banking Practices:** They contend that current standards inadequately address bank risks and that increased capital incentivizes prudent banking practices.
- **Resilient Banking System:** Economists suggest that the social costs of higher capital requirements are minimal compared to the benefits of a more resilient financial system.

14. Green Hydrogen

Recently the Ministry of New and Renewable Energy has introduced pioneering scheme to advance green hydrogen adoption through pilot projects.

Advantages of green hydrogen

- **Reduction of emissions-** Green hydrogen, produced from renewable energy sources, offers a clean alternative to traditional fossil fuels it will significantly reduce harmful emissions such as carbon dioxide and particulate matter.
- **Curbing pollution-** The adoption of hydrogen fuel in transportation can play a crucial role in curbing pollution in Indian cities, which are grappling with severe air quality issues.
- **Meet climate goals-** India has committed to ambitious climate targets under the Paris Agreement and Panchamrit was adopted by India at COP26.

- **Reducing fossil fuel imports-** By developing a domestic green hydrogen industry, India can reduce its dependence on costly fossil fuel imports, enhance energy security, and diversify its energy sources, thereby bolstering its resilience to supply disruptions and price fluctuations in the global energy market.
- **Business opportunity-** The transition to green hydrogen presents a significant business opportunity for India, both domestically and internationally. emerging hydrogen economy, attracting investment, creating jobs, and driving economic growth in key sectors such as manufacturing, energy, and transportation.
- **Zero carbon emission-** Hydrogen Fuel Cell Vehicles utilize hydrogen through combustion (similar to diesel and petrol cars) but emit no carbon
- **Energy efficiency-** The Hydrogen Fuel Cell Electric Vehicles convert hydrogen stored in a high-pressure tank into electricity via electrochemical reactions, research indicates that burning hydrogen in ICE vehicles is less energy-efficient than using it in fuel cells.

What are the challenges in green hydrogen?

- **High cost-** The high cost of producing green hydrogen, primarily due to the energy-intensive electrolysis process, remains a major barrier.
- **Logistical challenges-** Green hydrogen requires specialized infrastructure for storage and transportation, which adds to the overall cost and complexity of the hydrogen supply chain.
- **Infrastructure deficit-** The high cost of infrastructure deployment and limited consumer demand pose significant challenges.
- **Market dynamics-** Green hydrogen currently faces stiff competition from conventional fuels and battery electric vehicles (BEVs), particularly in terms of fuel costs and infrastructure availability.
- **Storage concerns-** The lack of suitable storage solutions for high-pressure hydrogen cylinders presents a significant technical barrier.
- **Safety concerns-** Hydrogen's flammability requires stringent safety standards and protocols for handling and storage, especially at refueling stations.
- **Stiff competition-** Advances in battery technology and the decreasing cost of electric vehicle batteries pose a long-term challenge to the viability of hydrogen fuel cell vehicles, particularly in the heavy-duty commercial vehicle sector.

15. Project Akashteer

- The Indian Army's Corps of Army Air Defense has initiated the induction of control and reporting systems under 'Project Akashteer' to bolster its air defense capabilities.

Project Akashteer

- The Akashteer Project is an initiative designed to **automate air defence control and reporting** processes by digitising the entire process.
- It is developed by **Bharat Electronics Limited (BEL)** as part of the 'Atmanirbhar Bharat' initiative.
- It seeks to induct Akashteer **Command and Control Systems**
- By integrating **radar and communication systems** at all levels into a unified network, 'Akashteer' aims to deliver an unprecedented level of situational awareness and control.
- This will enable swift **engagement of hostile targets**, significantly reduce the risk of fratricide, and ensure the safety of friendly aircraft in contested airspace.

How it will help India's air defence system?

The 'Akashteer Command and Control Systems' will significantly enhance India's air defense capabilities in several ways:

1. **Efficiency and Integration:** Digitizing Air Defence Control and Reporting processes with 'Akashteer' will improve efficiency and integration. This enables the Indian Army to respond swiftly to hostile threats while reducing the risk of friendly fire incidents.
2. **Situational Awareness:** 'Akashteer' integrates radar and communication systems into a unified network, providing the Indian Army with better situational awareness. This enables them to detect and engage hostile targets more effectively, ensuring the safety of friendly aircraft in contested airspace.
3. **Mobility and Resilience:** The system's vehicle-based and mobile Control Centers are designed for operational capabilities even in challenging communication environments. This ensures that the Indian Army can operate effectively in diverse terrain and adverse conditions.
4. **Automation:** Deployment of 'Akashteer' represents a move towards complete automation of air defense operations. This enhances the Indian Army's ability to defend its airspace, ensuring a safer and more secure future for the country.

16. Global Status Report for Buildings and Construction (Buildings-GSR) 2024

The "Global Status Report for Buildings and Construction (Buildings-GSR) 2024" was recently released by UNEP (UN Environment Programme) and GlobalABC (Global Alliance for Buildings and Construction).

- It offers an **annual snapshot** of the **buildings and construction sector's** progress globally, assessing policy, finance, technology, and solutions alignment with the **Paris Agreement goals** and making recommendations.

Key findings of the report:

- The sector accounts for about **21% of Global GHG emissions**, with buildings responsible for **34% of global energy demand** and **37% of energy and process-related CO2 emissions in 2022**.
- Notably, **40% of India's CO2 emissions** are attributed to buildings, highlighting the urgent need for action to meet the **Paris Agreement goals** and achieve **net-zero emissions by 2050** by reducing **embodied carbon** in building materials.

Recommendations:

- Improve **Building Codes & Policies** to achieve **net-zero carbon emissions** for both new and existing buildings.
- Expand **Renewable Energy Use in Buildings** to enhance affordability and access.
- Implement **Comprehensive Climate Action Roadmaps** for the sector, and provide **financial incentives** for developing **energy-efficient buildings** to decarbonize the sector.

17. Gape Limitation

- In ecology, the concept of 'gape limitation' sheds light on a simple yet crucial idea: predators can only eat prey that fit into their mouths.
- It dictates the range of prey accessible to predators, influencing the dynamics of ecological communities.
- Imagine a predator fish species with a relatively small mouth or gape size. This fish species primarily feeds on small aquatic invertebrates like zooplankton and small crustaceans. Due to its limited gape size, it cannot consume larger prey items such as larger fish or large insects.

- Now, let's introduce a different predator fish species with a larger mouth or gape size. This predator has a broader diet and can consume a wider range of prey items, including smaller fish and larger invertebrates.
- In this scenario, the predator with the larger gape size has a competitive advantage over the predator with the smaller gape size. It can exploit a greater variety of prey resources, potentially leading to differences in foraging success, growth rates, and overall fitness between the two predator species.
- This example demonstrates how gape limitation can influence the feeding ecology and interactions between predator and prey species in an ecosystem.

Significance in Evolution

- **Ecosystem Stability:** Alterations in predator or prey populations due to factors like habitat loss can disrupt these interactions, impacting biodiversity and ecosystem stability.
- **Predator-Prey Relationships:** Small predators target small prey, while larger predators can tackle bigger prey, thus impacting the balance of species within ecosystems.
- **Evolutionary Pressures:** Gape limitation drives evolutionary changes in both predators and prey. Prey species may evolve traits like increased speed or size to evade predation by predators with smaller mouths. Conversely, predators may adapt, such as developing larger jaws, to overcome gape limitations and hunt larger prey.

18. Consumer Confidence Survey

- The latest Consumer Confidence Survey conducted by the Reserve Bank of India in March 2024 reveals a significant boost in consumer confidence, particularly regarding future expectations.
- It says consumer confidence has hit **highest level in nearly 5 years**.

Consumer Confidence Survey (CCS)

- The **RBI conducts a bi-monthly** Consumer Confidence Survey to measure consumers' perceptions of the prevailing economic situation.
- It was **started in 2015** with surveys in 13 major cities.
- The survey is conducted **across various cities** and measures consumer confidence on parameters such as the economy, employment, price, income, and spending.
- The survey consists of **questions regarding consumers' sentiments** over various factors in the current situation and future.

Here are a few parameters that help aggregate overall confidence:

1. **Spending:** The consumer is asked about the willingness to spend on major consumer durables, purchasing vehicles, or real estate. This measures the overall spending scenario on necessities as well as luxuries for the next quarter.
2. **Employment:** The consumer is asked about current and future ideas on employment situations, joblessness, job security, which reflects the sentiments of the current or expected employment in the country.
3. **Inflation:** The consumer is asked about interest rates and levels of prices of all goods, tracking the price expected by consumers and their spending on basic necessities.

Components of CCS:

1. **Current Situation Index (CSI):** It measures overall consumer sentiment regarding the present economic situation.
2. **Future Expectations Index (FEI):** It analyses consumer sentiment for the next 12 months.

CSI and FEI are calculated based on people's views about the economy, their income, spending, job opportunities, and **prices compared to the previous year and expectations for the year ahead.**

Key Highlights of the recent report

- **Future Expectations Index (FEI)** has climbed by 2.1 points to reach 125.2, marking its highest level since mid-2019, indicating heightened optimism among consumers for the year ahead.
- **Current Situation Index (CSI)** has surged by 3.4 points to reach 98.5, marking its highest level since mid-2019.

19. Indian aviation, a case of air safety at a discount

- The **Indian Army designates 2024 as the 'Year of Technology Absorption'** to emphasize its commitment to leveraging technology for military transformation and staying ahead of adversaries.
- The focus is on embracing disruptive technologies (DT) like artificial intelligence, autonomous systems, robotics, and space technology to enhance strategic capabilities.

Absorption of Disruptive Technologies:

- Absorption involves acquiring, adapting, and integrating technologies into existing structures, known as legacy systems, in military terms.
- Integration of DTs with legacy systems is crucial, complementing rather than replacing existing platforms.
- Time-tested weapon platforms and tactics remain relevant, with the practical application of new technologies being key.

Strategic Considerations and Operational Realities:

- The realization of technology's potential in warfare hinges on strategic employment strategies rather than mere acquisition.
- Recent conflicts like Russia-Ukraine highlight the importance of traditional methodologies alongside technological advancements.
- Adaptation to new conditions is vital, requiring operational and tactical changes rather than solely technological solutions.

Planning for Future Challenges:

- Future planning must prioritize technology's role, acknowledging vulnerabilities and bridging gaps.
- Technology absorption should permeate unit levels, democratizing its use for true transformation.
- Macro-level considerations include organizational restructuring, human resource management, civil-military fusion, data integrity, and procurement policies tailored for DTs.

Conclusion: While the Indian military progresses towards technology absorption, sustaining momentum requires a nuanced understanding of requirements, informed by the recent and ongoing Russia-Ukraine conflict.

20. Magnesium- Copper- Cupric Oxide Fuel Cell

- Researchers at the University of Kerala have devised an eco-friendly fuel cell that primarily utilizes air and seawater to generate power.

Magnesium - Copper -Cupric Oxide Fuel Cell

- A semiconducting layer of **Cupric Oxide grown over Copper substrate** was used in a Magnesium- Sodium Chloride based fuel cell.
- It **breathes air**; produces only **electricity and heat** during its operation and **emits pure water**.

- The prototype, measuring 3 cm × 1.5 cm × 1 cm, delivered a **voltage of 0.7 V and a current of 0.35 A** for a duration of 10 minutes, showcasing the potential for practical application.

Fuel Cell

- A fuel cell is an electrochemical cell that converts the chemical energy into electricity of a fuel and an oxidizing agent.
- It generates electrical energy from fuel through an electrochemical reaction, offering high efficiency and zero emissions.
- They are an innovative technology poised to revolutionize electricity generation, often referred to as the “battery of the future”.
- Fuel cells provide high efficiency, low emissions, and can be used in various applications.

Note: Any electrochemical cell generates DC (Direct Current) output.

Significance of the Device

- This innovative fuel cell technology is anticipated to disrupt the market dominance of Lithium-ion batteries, offering a higher power output.
- Unlike conventional batteries, the Magnesium-based fuel cells utilized in this research operate by utilizing saline water as fuel and extracting oxygen from the surrounding air.

21. NASA to establish Coordinated Lunar Time

- The White House directed NASA to establish a time standard for the Moon, named Coordinated Lunar Time (LTC) by the end of 2026.
- This move aims to facilitate coordination among international bodies and private companies operating on the lunar surface.

Timekeeping on the Moon

- The Moon has its own day and night cycle, which lasts about **29.5 Earth days**.
- Currently, the time on the Moon is **measured using Coordinated Universal Time (UTC)**, which is the same timekeeping system used on the Earth.
- However, because the **Moon’s day is much longer than Earth’s day**, it would be difficult to use UTC for day-to-day activities on the Moon.

Coordinated Universal Time (UTC)

- UTC is a time standard introduced on **January 1, 1960**.
- It is based on **International Atomic Time (TAI)**, which is maintained by atomic clocks around the world.
- It is the **primary time standard used by many countries**, international organizations, and scientific research institutions.
- It is **expressed as a 24-hour clock** and is used to indicate the time offset from Coordinated Universal Time (UTC+0).
- **Time zones are defined as an offset from UTC**, with some time zones being ahead of UTC (UTC+1, UTC+2, etc.) and others being behind UTC (UTC-1, UTC-2, etc.).
- It is **adjusted periodically** to account for changes in the Earth's rotation, which can cause variations in the length of a day.

These adjustments are **made through the addition of leap seconds to UTC**, which help to keep the time standard synchronized with the Earth's rotation.

Need for a Lunar Time Standard

1. Earth's Time Standard:

- Earth's time standard is primarily based on **Coordinated Universal Time (UTC)**, set by the International Bureau of Weights and Measures in Paris, France.
- UTC is determined by a **weighted average of over 400 atomic clocks worldwide**, providing a universally agreed-upon standard for time measurement.

2. Challenges with Earth's Time Standard on the Moon:

- Time on the Moon **differs from Earth** due to factors like **gravity and the Moon's rotation**.
- Time on the Moon **ticks slightly faster due to lower gravity** (about **56 microseconds** every day) as per Einstein's Theory of General Relativity.

Establishing a Lunar Time Standard:

1. Technical Considerations:

- **LTC cannot be based on UTC** due to the time differences between Earth and the Moon.
- Current lunar missions operate on **independent timescales linked to UTC**, but this approach becomes challenging with multiple space crafts on the Moon.

2. Deployment of Atomic Clocks:

- Like on Earth, **atomic clocks can be deployed** on the lunar surface to establish a time standard.
- A 2023 report suggests placing at least **three atomic clocks** on the Moon's surface, accounting for variations in lunar rotation and local gravity.

3. Synthesizing Time Measurements:

- Atomic clocks placed at different **lunar locations** will tick at the Moon's natural pace.
- Output from these clocks will be **combined using algorithms** to generate a unified time standard for the Moon, tied back to UTC for Earth operations.

Benefits offered by Lunar Time

- Having a lunar time zone would also make it easier for scientists and researchers to conduct experiments and collect data on the Moon.
- It would also help to prevent confusion and errors that could arise from using different timekeeping systems on Earth and the Moon.

22. Inflation slowed, yet no relief on food bills

- India's retail inflation decreased to a 10-month low of 4.85% in March from 5.1% in February, signalling a moderation in overall price levels.
- However, food inflation remained high at 8.52%, with certain food items experiencing significant price rises, counteracting the overall slowdown in inflation.

Issues:

- **Persistent Food Inflation:** Despite the overall slowdown in inflation, food prices, particularly cereals and meat, continued to rise, maintaining pressure on household budgets.
- **Urban-Rural Disparity:** While urban consumers experienced a significant cooling of inflation, rural consumers faced slightly higher inflation rates, exacerbating disparities in the cost of living.
- **Potential for Future Spike:** Economists warned of potential spikes in food inflation due to ongoing heatwaves, which could further strain household budgets.

Significance:

- The moderation in overall inflation suggests some relief, but persistent food inflation poses challenges to households, especially in rural areas.
- The Reserve Bank of India (RBI) has projected average inflation to ease to 4.5% this year, but the ongoing quarter may see an average inflation of 4.9%, indicating continued volatility in prices.

Solutions:

- **Addressing Food Price Volatility:** Measures should be taken to mitigate volatility in food prices, including interventions to stabilize supply chains and improve agricultural productivity.
- **Policy Response:** The RBI may need to reassess its stance on interest rates in light of persistent food inflation, balancing the need for economic stimulus with inflation management.
- **Investment in Agricultural Infrastructure:** Long-term solutions require investment in agricultural infrastructure, technology, and practices to enhance productivity and reduce reliance on weather-dependent factors.

23. Concurrent heatwaves, sea level rises pose a threat to coastlines

Impact of Concurrent heatwaves and sea level rise on coastlines

- Concurrent heatwaves and extreme short-term sea level rise pose a growing threat to coastlines globally.
- A study published in Communications Earth & Environment reveals an increase in these concurrent events, especially in tropical regions.

Issues:

- **Rising Frequency of CHWESL Events:** Between 1998 and 2017, the occurrence of concurrent heatwaves and extreme sea level rise significantly increased compared to the previous two decades.
- **Impact on Coastal Communities:** CHWESL events pose a serious threat to coastal communities, with potential risks to human health and infrastructure.
- **Vulnerability of Tropical Regions:** Tropical areas are more likely to experience a greater increase in CHWESL events, amplifying the challenges faced by low or middle-income countries in these regions.

Significance:

- The study highlights the urgent need for research and action to address the escalating threat of CHWESL events to coastal communities.

- Understanding the characteristics and occurrences of these events is crucial for developing effective adaptation and mitigation strategies.

Solutions:

- **Research and Monitoring:** Increased research into the characteristics and occurrences of CHWESL events is necessary to better understand their impact and develop targeted responses.
- **Adaptation Measures:** Coastal communities need to implement adaptive measures such as coastal defenses, early warning systems, and urban planning strategies to mitigate the impacts of CHWESL events.
- **International Cooperation:** Collaborative efforts between countries, particularly in tropical regions, are essential to address the common challenges posed by CHWESL events and support vulnerable communities.

24. Changing Nature of Warfare

The Chief of Defence Staff has emphasized the importance of military leaders adapting to how warfare is evolving.

- Traditional warfare involved direct, physical battles. Now, in the 21st century, the conflict has become more intricate, evolving into what is known as **5th Generation War (5GW)**.

About 5th Generation Warfare (5GW):

- 5GW is defined by its focus on **information and perception manipulation**.
- This type of warfare uses data and strategies that target people's thoughts and beliefs without direct physical engagement.
- Methods of 5GW include:
 - **Cyber Warfare:** This involves attacking and compromising information networks.
 - **Psychological Operations:** These operations aim to affect the emotions and actions of the enemy using propaganda.
 - **Hybrid Warfare:** This combines traditional combat with tactics like misinformation and diplomatic strategies.
- The challenges now faced in warfare are increased by new technologies such as **Artificial Intelligence, drones, nuclear advancements, and space warfare**.

Key Characteristics of 5th Generation Warfare:

- It specifically targets people's preconceived notions and attempts to shape new ones through social engineering.
- 5GW is secretive and misleading, making it difficult to identify the source or the executor of operations.
- The use of cutting-edge technology is a hallmark of 5GW, employing tools and methods that appear highly advanced or even indistinguishable from "magic" to those unfamiliar with them.
- A significant aspect of 5GW is its **non-kinetic nature**, focusing on strategic influence rather than physical combat to achieve goals.

25. Index of Industrial Production (IIP) grows by 5.7% in February, 2024

India's **Index of Industrial Production (IIP)** increased by 5.7% in February, up from 3.8% in January, according to data from the Ministry of Statistics and Programme Implementation (MoSPI).

Index of Industrial Production (IIP)

- IIP as it is commonly called is an index that *tracks overall manufacturing activity* in different sectors of an economy.
- It is currently calculated using **2011-2012 as the base year**.
- It is compiled and published by **Central Statistical Organisation (CSO)** every month.
- CSO operates under the **Ministry of Statistics and Programme Implementation (MoSPI)**.

Components of IIP:

- Three broad sectors in IIP:
 1. Manufacturing (77.6%),
 2. Mining (14.4%)
 3. Electricity (8%).
- **Electricity, crude oil, coal, cement, steel, refinery products, natural gas, and fertilizers** are the eight core industries that comprise about 40 per cent of the weight of items included in the IIP.

Basket of products:

There are 6 sub-categories:

1. **Primary Goods** (consisting of mining, electricity, fuels and fertilisers)
2. **Capital Goods** (e.g. machinery items)
3. **Intermediate Goods** (e.g. yarns, chemicals, semi-finished steel items, etc)
4. **Infrastructure Goods** (e.g. paints, cement, cables, bricks and tiles, rail materials, etc)

- Consumer Durables** (e.g. garments, telephones, passenger vehicles, etc)
- Consumer Non-durables** (e.g. food items, medicines, toiletries, etc)

Who uses IIP data?

- The factory production data (IIP) is used by various government agencies such as the Ministry of Finance, the Reserve Bank of India (RBI), private firms and analysts, among others for analytical purposes.
- The data is also used to compile the Gross Value Added (GVA) of the manufacturing sector in the Gross Domestic Product (GDP) on a quarterly basis.

IIP base year change:

- The base year was changed to 2011-12 from 2004-05 in the year 2017.
- The earlier base years were 1937, 1946, 1951, 1956, 1960, 1970, 1980-81, 1993-94 and 2004-05.

How is IIP different from ICI?

- **IIP** is compiled and published monthly by the **National Statistics Office (NSO)**, Ministry of Statistics and Programme Implementation six weeks after the reference month ends.
- However, **ICI** is compiled and released by **Office of the Economic Adviser (OEA)**, Department of Industrial Policy & Promotion (DIPP), and Ministry of Commerce & Industry.

The **Eight Core Industries** comprise nearly **40.27%** of the weight of items included in the Index of Industrial Production (IIP). These are Electricity, steel, refinery products, crude oil, coal, cement, natural gas and fertilisers.

26. Credit Deposit Ratio (CDR)

Indian banks are facing a significant deposit crunch, with the **Credit Deposit Ratio (CDR) reaching 80%**, the highest since 2005.

Credit Deposit Ratio (CDR)

- The CDR is a key metric that shows what percentage of a bank's deposits are used for lending.
- Essentially, it tells us how much of the **deposited money is given out as loans**.
- A **higher CDR** suggests that a bank is utilizing a large portion of its deposits for lending, which can contribute to economic growth.
 - However, it also brings **increased risk** as it indicates a higher reliance on deposits for loan disbursement.
- Regulators keep an eye on the CDR to ensure banks maintain a healthy balance between their lending activities and the associated risks.

CDR Trends and Their Effects:

- A CDR of 75% means that 75% of the bank's deposits are being loaned out, indicating a three-fourths utilization rate.
- A **low CDR** reflects poor credit growth compared to deposits, signalling weak lending activity. On the other hand, a **high CDR** suggests strong credit demand, which can be a sign of economic activity but may also indicate slower deposit growth.
- After the demonetization in late 2016, the CDR decreased to below 70%, mainly due to the increased focus on exchanging banknotes and a reduction in loan issuance.

27. Geospatial modeling and mapping of soil erosion in India

A new study titled "**Geospatial modeling and mapping of soil erosion in India**" marks the **first comprehensive national-scale assessment of soil erosion** and sediment yield mapping across India, shedding light on the country's **soil health**.

Key highlights of the study:

- Soil erosion, described as the gradual **removal** of the **topmost soil layer** by **water, wind, and mass movement**, leads to long-term soil deterioration and is exacerbated by **unsustainable human activities**.

- It results in **reduced agricultural productivity**, sedimentation of **water bodies, flooding, landslides, and desertification**.
- The study's key findings include an **annual potential soil loss of 21 tonnes/ha/yr** in India, with **rainfall intensity** and **topographic factors** being the primary contributors to this erosion.
- Over **78 million hectares of farmland** suffer from a loss of productivity by an average of **8% annually**.
- Approximately **5% of India's geographical area** falls into the **catastrophic erosion category**, threatening infrastructure like roads and buildings with deep gullies, especially in parts of **Assam, Meghalaya, and Himachal Pradesh**.
- The **Brahmaputra basin** faces the maximum potential soil erosion, followed by the **Mahanadi and Ganga basins**.

28. Global Trade Outlook and Statistics Report

The **World Trade Organisation (WTO)** has published the latest **Global Trade Outlook and Statistics Report**, focusing on trends and statistics related to **digitally delivered services** across the globe.

Key Findings of the Report:

- The report indicates a significant growth in global exports of digitally delivered services, which reached **\$4.25 trillion in 2023**.
 - This represents a **9% increase** from the previous year and accounts for **13.8% of total global exports**.
- Regional data shows that exports from **Europe increased by 11%**, giving it a market share of **52.4%**. Asian exports grew by **9%**, holding a **23.8% market share**.
- In comparison to **China and Germany**, which each saw a **4% growth**, India's export growth in this sector has been notably stronger.
- India now stands as the **fourth-largest exporter** globally in digitally delivered services.

Challenges in Global Trade:

- The report highlights concerns about trade fragmentation, noting a **6% decline** in the trade of intermediate goods, though non-intermediate goods trade has remained stable.
- Geographical challenges also pose significant issues:
 - The **Panama Canal** is currently operating at partial capacity due to freshwater shortages, impacting **6% of the global trade volume**.

- The **Suez Canal**, responsible for about **12% of global trade**, faces complications in its operations due to attacks on vessels.
- Trade route diversions, particularly the necessity to use the **Cape of Good Hope route**, have added around **ten days** to the travel time for journeys between Asia and Europe.

29. Extraction of Hydrocarbon

Over millions of years, organic materials from deceased organisms undergo geological processes such as heat and pressure within the Earth's crust that transforms these into hydrocarbons.

Where hydrocarbons are located?

- **Rock formation**- The most common forms in which these hydrocarbons exist in subterranean rock formations are natural gas, coal, crude oil, and petroleum.
- **Reservoirs**- Hydrocarbons are typically found in underground reservoirs, they are created when a more resistant rock type overlays a less resistant one, effectively creating a "lid" that traps the hydrocarbons below it.

Rock formation are crucial as they prevent hydrocarbons from floating to the surface and dissipating

- **Kerogen**-The primary source of hydrocarbons in these underground formations is kerogen, which consists of lumps of organic matter.
- **Source rock**- The rock that contains kerogen is known as the source rock.
- **Petroleum geologists**- They have several responsibilities like locating source rock, analysing characteristics and estimating hydrocarbon potential, through this they take drilling decision.

How are hydrocarbons accessed?

- **Production well**- The first step is to create a production well, which serves as the primary hole through which hydrocarbons are extracted from the reservoir, the well's location is chosen to maximize drainage from reservoir.
- **Drilling process**-Engineers use a drilling machine to create the well.
- **Steel casings**- They are slightly narrower than the hole created by drill bit, they are lowered into the tunnel.

- **Cement slurry-** It is pumped into the gap between the tunnel's outer edge and the casings, it protects the upper parts of the tunnel from collapsing and prevents soil **fluids from entering the well.**
- **Drilling fluid-** The tunnel is filled with drilling fluid (also known as mud), they serve two primary purposes.
 - It prevents the drill bit from overheating.
 - It carries away pieces of rock cut by the bit when pumped to the surface.
- **Controlled pressure-** The pressure of the drilling fluid must be carefully controlled, if not it could force hydrocarbons in the source rock to rush into the gap between the casing and the drill string, causing an eruption like an oil volcano.
- **Blowout preventers-** Modern drilling setups include mechanical valves called blowout preventers, they prevent uncontrolled gushing of hydrocarbons in the borehole and manage equipment inside.
- **Mud-logging-** The process of recording rock cuttings by depth and studying their properties is called mud-logging.
- **Drill bit descent-** As the drill bit descends, the drill pipe length is increased by adding extensions, the drill pipe can also be pulled up if replacement is needed.
- **Sophisticated drilling rigs-** They come equipped with generators and batteries to power various steps. Offshore rigs have additional facilities to enhance stability and aid extraction through the water column.
- **Stopping extraction-** The contractor may cease extraction activities if the well is not producing enough to be profitable.
- **Plugging the well-** The well must be plugged to prevent hydrocarbons and gases from escaping into the environment. Plugs can be temporary (if there's a possibility of recommissioning the well) or permanent.
- **Plugging issues-** Improperly plugged wells can lead to environmental issues. Plugs may deteriorate or fail due to quality issues or external disturbances.
- **Decommissioning-** The most thorough method of concluding operations is decommissioning the well. The process is comprehensive but can be expensive and sometimes commercially unfeasible.
- **Environmental concerns-** Improperly abandoned wells can be significant sources of methane emissions. The production and use of equipment for hydrocarbon extraction also contribute to emissions.

30. KAVACH Anti-Collision System

- Kavach, an **automatic train protection (ATP) system**, was initially named **Train Collision Avoidance System (TCAS)**.
- - **Development commenced in 2011** as **Indian Railways and Research Designs & Standards Organisation (RDSO)** sought a domestically developed ATP system.
 - **B. Rajaram**, credited with developing the Skybus Metro system, **played a key role** in Kavach's development.
 - **Field trials began in 2014**, refining the system's specification.
- **Final approval was granted in 2019**, certifying Kavach for compliance with **Safety Integrity level 4 (SIL-4) operations**.

Working Mechanism:

- Kavach comprises trackside **Radio Frequency Identification (RFID) tags**, onboard locomotive equipment, and radio infrastructure.
- It **communicates via radio**, enabling real-time train monitoring.
- **Drivers receive alerts**, and automatic braking is triggered to prevent collisions.
- Kavach uses various data inputs like **location, direction, and time** to ensure safety.
- **Event recorders** retain records of interactions and incidents for analysis.
- **Alerts and automatic braking** ensure an immediate response to hazardous situations.

How does it help prevent collision?

- Kavach is designed to alert the locomotive pilot **if they fail to notice a 'red signal'** and continue at a speed that would surpass the signal.
- If the pilot **does not slow down below 15 kmph**, Kavach **automatically applies the brakes**, bringing the train to a halt.

Issues with KAVACH

- **High Deployment Cost:** Implementing Kavach costs ₹50 lakh per kilometer for the Indian Railways.
- **Low Coverage:** Currently, Kavach covers only 1,500 kilometers of rail routes, a small fraction of the total 68,000-kilometer network (as of November 2023).
 - Expanding its coverage, particularly on high-density routes, remains a formidable challenge.

31. Norms tweaked for Green Credit Programme

The Union Environment Ministry has rolled out norms for the Green Credit Programme (GCP).

Green Credit Programme (GCP)

- The GCP as **notified on October 13, 2023** by the government of India, is an innovative market-based mechanism.
 - This program is part of the broader **'LiFE' campaign (Lifestyle for Environment)**, and it encourages and rewards voluntary environmentally positive actions.
- It involves **various stakeholders** like- individuals, farmers, communities, private sector industries, and companies.
- The **Indian Council of Forestry Research and Education (ICFRE)**, based in Dehradun, serves as the GCP Administrator, responsible for programme implementation, management, monitoring, and operation. **Initially**, the GCP focuses on **water conservation and afforestation**.

What are Green Credits?

- The green credit rules notified under the **Environment (Protection) Act 1986** defines 'green credit' as a **single unit of an incentive provided for a specific activity** that delivers a positive impact on the environment.
- **Each tree** planted and evaluated by the ICFRE **after two years could yield one 'green credit,'** which can be utilized in two ways:
 1. Compliance with forest laws necessitating recompense for forest land diversion.
 2. Reporting under environmental, social, and governance norms or meeting corporate social responsibility requirements.

Notable Feature: Green Credit Registry

- The ICFRE, alongside experts, is developing the **Green Credit Registry** and **trading platforms** to facilitate the registration, buying, and selling of green credits.
- To obtain green credits, individuals and entities must **register their activities** through the central government's dedicated app/website (www.moefcc-gcp.in).
- The **administrator verifies activities**

s through a designated agency, with self-verification for small projects. Once verified, the administrator issues a tradeable green credit certificate.

Future prospects

The programme is currently in a **pilot phase**, with ongoing deliberations on:

1. Quantifying the contributions of **shrubs and grasses** to green credits;
2. Equivalence between **green and carbon credits**;
3. Allocation of **credits for compensatory afforestation**.

32. On India's 'heat action plans'

Come summer, we are used to seeing heat alerts from the India Meteorological Department (IMD) for various parts of India. This year, these alerts began in February itself.

Heatwave

- According to the IMD, the definition of a heatwave **depends on the physiography of regions**.
- The IMD will declare a heatwave if the maximum temperature recorded at a station is 40 degrees Celsius or more in the plains, 37 degrees Celsius or more in the coast, and 30 degrees Celsius or more in the hills.

Heat Action Plans (HAPs) to tackle heatwave

- **Aim:** HAPs aim to increase preparedness and lower the adverse impacts of extreme heat by outlining strategies and measures to prepare for, address, and recover from heat waves.

- The National Disaster Management Authority and IMD are reported to be working with 23 States to develop HAPs.
- **Issue with Database:** There is no centralized database on HAPs, but at least 23 HAPs exist at the State and city level, with a few States, such as Odisha and Maharashtra, laying out district-level HAPs.

Key components of Heat Action Plans (HAPs)

Limitation

- **Challenges related to Determining Heatwaves:** While a national threshold is currently used to determine heatwaves, determining them at smaller scales such as states, districts, and cities poses a challenge due to variations in local factors like the urban heat island effect, type of roofing, and proximity to water or green bodies, as well as humidity.
- **Inconsistent Methods and Vulnerability Assessments:** The methods used for vulnerability assessments in HAPs are inconsistent because of the diverse physiography of regions
- **Addressing Vulnerable Populations:** While HAPs prioritize protecting vulnerable populations, targeted interventions often fail to account for varying needs based on local socio-economic and demographic factors.
- **Resource Allocation and Financing:** Implementation of HAPs varies depending on local government priorities and available capacities because at the local level Fund crunch.
- **Integration and Collaboration:** HAPs are currently standalone plans with limited finance, highlighting the need for integration with broader action plans promoting urban resilience and climate adaptation to pool resources effectively.

Way Forward:

- **Determination at Local Scales:** Invest in local monitoring systems that capture variations in temperature, humidity, and other relevant factors.
- **Standardizing Methods:** Establish guidelines for conducting vulnerability assessments that account for diverse physiography and local context.
- **Tailoring Interventions:** Conduct comprehensive community consultations to understand the unique needs of vulnerable populations in different localities.
- **Funding and Resources:** Advocate for increased funding for HAPs at the national and local levels through budget allocations, grants, and public-private partnerships.

- **Integration and Collaboration:** Establish inter-agency task forces or committees to coordinate HAPs with other relevant initiatives, such as urban planning, public health, and disaster management.

33. SPACE Testing & Evaluation hub for Sonar Systems

A state-of-the-art SPACE testing and evaluation hub for sonar systems, designed for the Indian Navy, was inaugurated by DRDO.

Submersible Platform for Acoustic Characterisation and Evaluation (SPACE)

- The SPACE is located at the **Underwater Acoustic Research Facility in Kulamavu, Idukki, Kerala.**
- It is **developed by the Naval Physical & Oceanographic Laboratory of DRDO.**
- It is set to become a **premier testing and evaluation hub for sonar systems** deployed on various Indian Navy platforms, including ships, submarines, and helicopters.

Key Features of SPACE:

- SPACE comprises two distinct components:
 1. **Floating Platform** on the water surface and
 2. **Submersible platform** capable of descending to **depths of up to 100 meters** using winch systems.
- After completing operations, the submersible platform can be winched up and docked with the floating platform, ensuring efficient utilization of resources.

Functions and Capabilities:

- The primary function of SPACE is the **evaluation of complete sonar systems**, facilitating rapid deployment and retrieval of scientific packages such as sensors and transducers.
- It will serve for **surveying, sampling, and data collection** of **air, surface, mid-water, and reservoir floor** parameters utilizing modern scientific instrumentation.
- It will address the **data processing and sample analysis** requirements, ushering in a new era of Anti-Submarine Warfare research capabilities.

34. India 's Pulses Import: Figures and Value

- India's pulses imports in fiscal 2024 witnessed a remarkable surge, soaring by **84% year-on-year to their highest level in six years.**
- Lower production levels prompted India *to permit duty-free imports of red lentils (Masoor) and yellow peas (Tur/Arhar)*, further driving the increase in imports.
- India imported a total of **4.65 million metric tons** of pulses in the fiscal year ending March 31, 2024, marking the highest volume since fiscal 2018.
- In terms of value, imports **surged by 93%** to reach **\$3.75 billion** in the same period.

Pulses Production in India: Key Facts

- India is the **largest producer** (25% of global production), **consumer** (27% of world consumption) and **importer** (14%) of pulses in the world (as per FAO).
- Pulses account for around **20% of the area under foodgrains** and contribute around **7-10% of the total foodgrains production** in the country (as per Vikaspedia).
- **Gram (Chana) is the most dominant pulse** having a share of around 40 per cent in the total production followed by **Tur/Arhar** at 15 to 20 per cent and Urad and **Moong** at around 8-10 per cent each. (Reference)

Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Karnataka are the top five pulses producing States. (Reference)

Global Impact of Higher Imports

- The surge in imports by India, the **world's largest importer, producer, and consumer** of protein-rich pulses, has been bolstering global prices.
- It has also contributed to **reducing stocks in exporting countries** such as Canada, Australia, and Myanmar.

Significance of Pulses Consumption

1. Nutritional Value:

- Pulses are considered to be '*poor man's protein*'.

- They contain *20-25% of protein by weight*, with twice the protein available in wheat and thrice that present in rice.
- WHO recommends *80gm/day* of Pulses in the diet.

2. Environmental Sustainability:

- Pulses have *low carbon and water footprints*, making them integral to sustainable farming.
- Water footprints for producing **one kilogram of meat** are *five times* higher than that of pulses.
- Pulses emit *0.5 kilogram in CO2 equivalent per kilogram*, while *meat produces 9.5 kilograms* in CO2 equivalent.

35. Trend seen in private investment in India?

The failure of private investment, as measured by private Gross Fixed Capital Formation (GFCF) as a percentage of gross domestic product (GDP) at current prices, to pick up pace has been one of the major issues plaguing the Indian economy.

GFCF

- GFCF refers to the growth in the size of fixed capital in an economy.
- Fixed capital refers to things such as buildings and machinery, for instance, which require investment to be created.
- So private GFCF can serve as a rough indicator of how much the private sector in an economy is willing to invest.
- Overall GFCF also includes capital formation as a result of investment by the government.

Why does it matter?

- GFCF matters because fixed capital, by helping workers produce a greater amount of goods and services each year, helps to boost economic growth and improve living standards.
- In other words, fixed capital is what largely determines the overall output of an economy.
- **Pre-liberalization (1950s to early 1990s):** Private investment remained relatively stable, hovering around or slightly above 10% of GDP. Public investment, however, steadily increased during this period.
- **Liberalization (early 1990s onwards):** Economic reforms in the early 1990s improved private sector confidence, leading to a significant uptick in private

investment. Public investment, although still significant, began to decline relative to private investment.

- **Post-global financial crisis (late 2000s to present):** Private investment continued to grow until the global financial crisis of 2007-08, reaching around 27% of GDP. However, from around 2011-12 onwards, private investment began to decline, hitting a low of 19.6% of GDP in 2020-21.

Why has private investment fallen?

- **Low private consumption expenditure:** Some economists attribute the decline in private investment to low private consumption expenditure. They argue that businesses need confidence in future demand to invest in fixed capital, and boosting consumption expenditure can help stimulate private investment.
- **Structural problems and policy uncertainty:** Other economists argue that structural issues and policy uncertainty are core reasons behind the fall in private investment. They point to unfavourable government policies and policy uncertainty as major factors affecting private investment.

Conclusion: To address the decline in private investment, India needs policies promoting consumer confidence and stable, conducive business environments. Balancing pro-growth fiscal measures with structural reforms can stimulate investment, fostering economic growth and prosperity.