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News Analysis & Prelim Bits



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MARCH 2023

1. IMPORTANT TOPICS OF THE MONTH

1.1 Silicon Valley Bank and Signature Bank Crisis

Why in news?

Silicon Valley Bank collapsed with astounding speed, leaving investors on edge about whether its demise could spark a broader banking meltdown, like the 2008 financial crisis.

What is Silicon Valley Bank (SVB) crisis about?

Silicon Valley Bank (SVB)

- Established in 1983, it is a California based bank that lends to early stage technology and biotech start-ups, and manages funds of venture capitalists.
- Just before collapsing it was America's 16th largest commercial bank.

Banks fail as they lend long term, whereas, their deposits are short term. They cannot call back their long-term loans easily, whereas their short-term deposits have to be paid on demand.

SVB collapse

Impact of the crisis

- | | | |
|--|------------------------|---|
| <ul style="list-style-type: none"> Dump bank stocks – Shock from Silicon Valley's miseries echoed through parts of the banking sector, and investors started to dump bank stocks. | Monetary Policy | <ul style="list-style-type: none"> The era of easy monetary policy has enabled tech companies of all sizes to raise and deploy funds, and SVB benefited from this boom. |
| <ul style="list-style-type: none"> However, <i>the nation's largest banks appeared insulated from the fallout</i>. | Global Inflation | <ul style="list-style-type: none"> The recent Ukraine war fuelled global inflation levels and that led central banks to tighten monetary policy aggressively. |
| <ul style="list-style-type: none"> Strong buffer – Most analysts point out that US and European banks have much stronger financial buffers now than during the global financial crisis. | Government Bonds | <ul style="list-style-type: none"> SVB ploughed billions into <i>US government bonds</i> during the era of near-zero interest rates. |
| <ul style="list-style-type: none"> Unique existence – SVB was large but had a unique existence by servicing nearly exclusively the technology world and VC-backed companies. | Interest rate hike | <ul style="list-style-type: none"> The Federal Reserve hiked interest rates aggressively to tame inflation. |
| <ul style="list-style-type: none"> Affects start-ups – At a time the start-ups needed financial backing, one of its biggest supporters has collapsed. | Fall in bond price | <ul style="list-style-type: none"> When interest rates rise, bond prices fall, so the jump in rates eroded the value of SVB's bond portfolio. |
| <ul style="list-style-type: none"> Balance sheets – If central banks become concerned that SVB's problems are indicative of a broader weakness in corporate balance sheets, they can raise the rates. | High borrowing costs | <ul style="list-style-type: none"> At the same time, the Fed's hiking sent borrowing costs higher, meaning tech start-ups had to channel more cash towards repaying debt. |
| <ul style="list-style-type: none"> Survive recession – The stress tests of the largest banks and financial institutions showed that all of them would survive a deep recession and a significant rise in unemployment. | Withdrawal of deposits | <ul style="list-style-type: none"> The start-ups struggled to raise new venture capital funding which forced companies to withdraw deposits held by SVB to fund their operations and growth. |
- Impact on US dollar rates** – Both US economy and the US currency is expected to face investors' anger in near term.

Response from the US Government

- Prompt interventions** – The SVB's fallout was followed by regulatory interventions involving coordination between the Treasury Secretary, the banking regulator and the resolution authority.
- FDIC** – The bank was closed by the California banking regulator and placed under the receivership of Federal Deposit Insurance Corporation (FDIC).
- Bridge bank** – The FDIC seized the assets of the bank, created a bridge bank called the Deposit Insurance National Bank of Santa Clara and transferred all insured deposits of SVB to the bridge bank.

Silicon Valley Bank's downfall is the largest failure of a financial institution since Washington Mutual collapsed at the height of the 2008 financial crisis more than a decade ago.

- The bridge bank, in this case, will ensure continuity of all banking activities.
- **BTFFP** – To prevent the run on banks and meet the demands of depositors, the US Fed has set up an additional funding facility for banks called the Bank Term Funding Program (BTFFP).
- Under this facility, *loans of up to 1 year* will be provided to banks and other depository institutions.
- Those taking advantage of the facility will be asked to *pledge high-quality collateral* such as treasuries, agency debt, and mortgage-backed securities.

Bridge bank is an entity to temporarily take over the liabilities and operations of a failed bank till a buyer is found.

- **Exchange stabilisation Fund** – The Department of the Treasury will make available up to \$25 billion from the Exchange Stabilisation Fund as a backstop for the BTFFP.
- All insured depositors have access to their insured deposits.
- The uninsured depositors will receive their pay-outs as the FDIC sells the assets of the SVB.

What led to the collapse of Signature Bank?

- **Signature Bank** – It is a New York financial institution with a big real estate lending business and had recently made a move towards cryptocurrency deposits.
- That ended up being a fateful decision because the bottom fell out of crypto assets after the [collapse of FTX](#).
- Another cryptocurrency-focused bank, Silvergate Bank, was forced to voluntarily close, leading to the fallout of SVB.
- To some extent, Signature Bank is a victim of the panic around Silicon Valley Bank.

Most preferred by Indians	• The collapse of the bank triggered a nerve wracking crisis for Indian start-ups that preferred SVB to park their funds.
Loss of employment	• Not having access to money would mean firing a large number of employees.
Recession in West	• If the West slips into a recession, it will impact Indian financial markets and growth rates.
Regulated by RBI	• This crisis won't have much impact on Indian treasuries, since they are regulated by Reserve Bank of India.
Forex market	• Those who have position in dollar may have to face the beating, since US dollar has retraced from 3-month highs.
Mutual funds	• Debt funds won't have much impact unlike for Indian mutual fund investors who have exposure in international mutual funds and international hybrid mutual funds.
India better placed	• Unlike the concentration of deposits of SVB, 60% of deposits of Indian banks are held by households.
Asset side	• On the asset side, 60% are held in the form of loans and investments constitute 25% of the assets.

Impact on India

What is the way forward?

- **Need for counter-cyclical tools** – The SVB saga underscores the need to have adequate countercyclical macro prudential tools to provide a buffer against losses on account of rising interest rates.
- **Resolution Corporation** - The legal framework should provide for oversight of the bank by the RBI and a Resolution Corporation.
- It should have the authority to monitor risks, intervene early and resolve through the globally-recognised resolution tools such as *sale of business and bridge institutions*.
- **Need for framework** – Important lesson emerging from the SVB crisis is the need to enact pending banking reforms & for a prompt resolution framework so depositors don't face a moratorium on their deposits.
- **FRDI Bill** – *The Financial Resolution and Deposit Insurance (FRDI) Bill* that provides for establishing a resolution authority, which would have powers to undertake prompt resolution for banks need to be reintroduced.

2008 Financial Crisis

- The 2008 financial crisis began with *cheap credit and lax lending* standards that fuelled a housing bubble.
- The 2008 financial crisis developed gradually, when home prices began to fall in early 2006.

- In early 2007, subprime lenders began to file for bankruptcy.
- In June 2007, two big hedge funds failed, weighed down by investments in subprime loans.
- In August 2007, losses from subprime loan investments caused a panic that froze the global lending system.
- In September 2008 *Lehman Brothers collapsed* in the biggest U.S. bankruptcy ever.
- When the bubble burst, the banks were left holding trillions of dollars of worthless investments in subprime mortgages.
- *The Great Recession* that followed cost many their jobs, their savings, and their homes.

1.2 Women's Reservation Bill

Why in news?

Bharat Rashtra Samithi (BRS) leader began a day-long hunger strike in New Delhi, demanding passage of the Women's Reservation Bill (WRB).

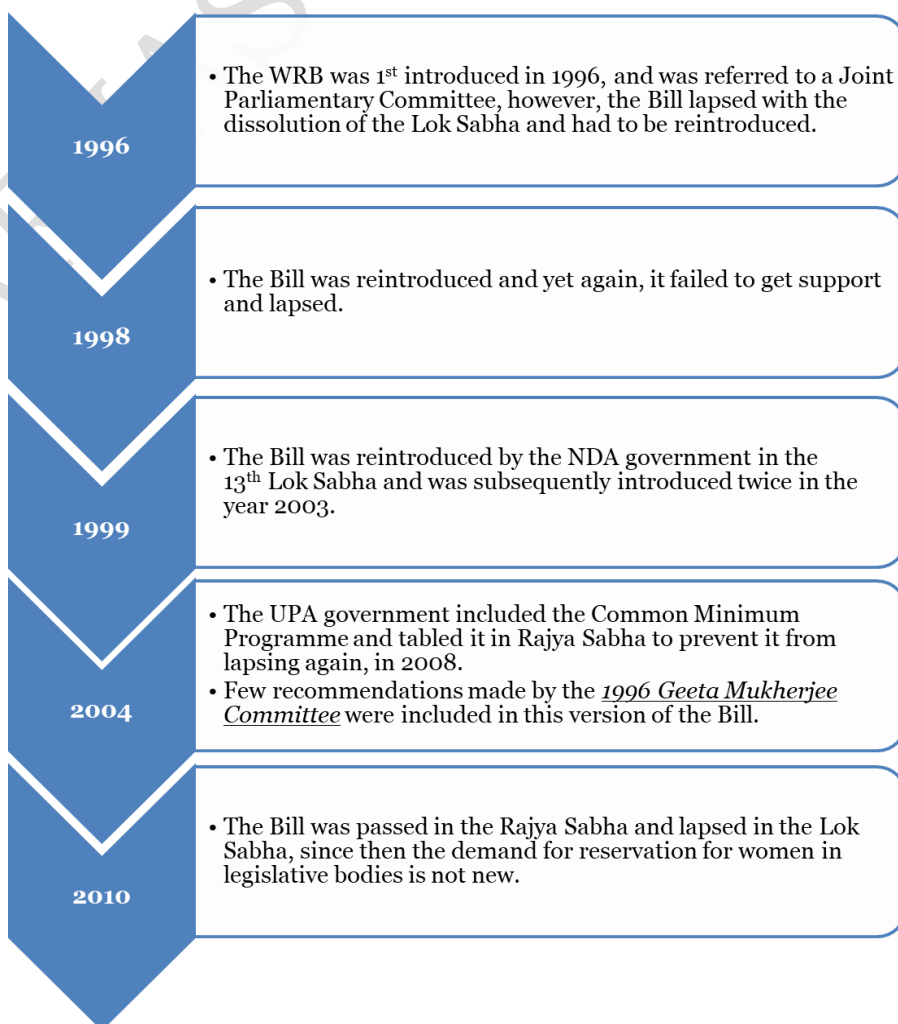
What is the Women's Reservation Bill (WRB)?

- The Constitution 108th Amendment Bill, 2008 seeks to reserve one-third (33%) of all seats for women in the Lok Sabha and the state legislative assemblies.
- Reserved seats may be allotted by rotation to different constituencies in the state or union territory.
- Reservation of seats for women shall cease to exist 15 years after the commencement of this Amendment Act.

WRB is seen as a logical extension of the 72nd & 73rd constitutional amendments (1992, 1993), which reserved one third of all seats and chairperson posts for women in rural and urban local governments.

Why did the parliament fail to pass the WRB?

- **Heated debates & sexist taunts** – The WRB has seen some of the heated debates and a fair share of sexism.
- **Quota within quota** – The 1996 committee recommended reservation for OBC women within the 1/3rd reservation for women of the Bill, however, this demand has never been incorporated.
- This has led to opponents saying that the WRB will not benefit their women.
- **Lack of political ability** – Only Odisha's Biju Janata Dal (BJD) and West Bengal's Trinamool Congress (TMC) have reserved seats for women for election candidatures.
- **Diverts attention** – Opponents contend WRB diverts attention from the larger issues of electoral reform such as criminalisation of politics and inner party democracy.



What is the status of Women Reservation in India?

- **Gujarat** – It elected just 8% of women legislators in its 182-member assembly.

- **Himachal Pradesh** – Where every second voter is a female, has elected 67 men and only 1 woman.
- **National average** – The national average of women in all state assemblies remains around 8%.
- **Rankings** – India ranks 144 out of 193 countries in the representation of women in parliament according to *Inter-Parliamentary Union's report*.
- Among our immediate neighbours, India falls behind Bangladesh, Pakistan, and Nepal.

Why is WRB important?

- Women have historically suffered due to systemic inequality and barriers.
- **Caste groups** – Any scheme of women's reservation must be within the constitutional tenets and must also account for its representation across caste groups.
- **Gender quota** – Without a gender quota, women's representation will continue to remain marginal causing a massive deficit in our democracy.
- **Panchayats** – Some recent studies on panchayats have shown the positive effect of reservation on empowerment of women and on allocation of resources.
- **Vote share** – Though women's vote share has increased the number of women in positions of power has not increased.

What is the way forward?

- With its massive women population, India has a huge reservoir of potential which, if unleashed, will take the country much ahead.
- Women's reservation will jump-start the democratic process, allowing significant majority to have a say in how their lives must be governed.

1.3 Appointment of Election Commissioners

Why in news?

Supreme Court (SC) ruled that the appointment of the Chief Election Commissioner (CEC) and Election Commissioners (EC) by the President will be based on the advice of a three-member high-level committee.

What were the petitions about?

- **PIL** – In 2015, a public interest litigation (PIL), contended that successive governments failed to set up a “fair, just and transparent process” for the selection of Election Commissioners.
- **Political leaning** – The Court noted that an Election Commissioner could be competent and honest but could have a definite political leaning which may show in office.
- **Not weak-kneed** – The SC observed that the country needed Election Commissioners who would not shirk from even taking on the Prime Minister if required, and not just “weak-kneed” yes-men.



There is no use making the tenure of the Election Commissioner a fixed and secure tenure if there is no provision in the Constitution to prevent either a fool or a knave or a person who is likely to be under the thumb of the executive.

What is the current process of selection of Election Commissioners?

- In *Anoop Baranwal vs Union of India*, the Supreme Court (SC) ruled that the appointment of the Chief Election Commissioner (CEC) and Election Commissioners (EC) by the President will be based on the advice of a three-member high-level committee.
- **Article 324 (2)** – President shall with aid and advice of Council of Ministers, appoint CEC and ECs, till Parliament enacts a law fixing the criteria for selection, conditions of service and tenure.
- **Tenure** – Under the *Election Commission Act, 1991*, an EC can have a tenure of *six years or up to the age of 65*, whichever is earlier.
- Typically, the *senior-most election commissioner is appointed as the CEC*.
- **Removal** – Once appointed, the *Chief Election Commissioner* can be removed from office only through *Parliamentary impeachment*.
- However, *no such protection of tenure is available to ECs*, who can be removed by the government on the recommendation of the CEC.

To know more [click here](#).

What revision has the top court ordered?

- **3 Member Panel** – As per the SC's directions, a panel that includes the *Prime Minister, the Leader of the Opposition in Lok Sabha and the Chief Justice of India* will now advise the President regarding the appointment of Election Commissioners.
- This is *similar to the appointment of the Director of the Central Bureau of Investigation*.
- If the position of the Leader of the Opposition is vacant, the leader of the single largest opposition party will be on the committee.
- This system of appointment will be in force till the Parliament comes up with a specific law.
- **Funding** – The Parliament and central government to constitute an independent secretariat to deal with the expenditure of the Commission, and insulate it from any financial obligation to the government.

What are the negative outcomes of the ruling?

- | | | |
|--|--------------------------|--|
| <ul style="list-style-type: none"> • Doctrine of separation of powers – It flows from the Constitution, which sought to establish 3 institutional organs, namely the legislature, executive and the judiciary. | Constituent Assembly | <ul style="list-style-type: none"> • The framers' belief that delegation to Parliament would solve the vexing issue of the independence of the EC instead of constitutionalising it seems particularly naive. |
| <ul style="list-style-type: none"> • Against basic structure – The Court's justification of these appointment making powers is contrary to the basic structure doctrine, which the Court itself has continuously championed. | Inaction from parliament | <ul style="list-style-type: none"> • Parliament has not acted, and the executive controls the appointments process, is contrary to the intention underlying Article 324. |
| <ul style="list-style-type: none"> • National Judicial Appointments Commission (NJAC) – In 2015, the SC observed that the NJAC is <i>unconstitutional</i> as a result of its violation of the basic structure doctrine. | Role of EC in democracy | <ul style="list-style-type: none"> • The ever-expanding scope, powers, and functions of the Election Commission, in the context of the role of free and fair elections in sustaining constitutional democracy. |
| | Right to vote | <ul style="list-style-type: none"> • The <i>constitutional right to vote</i> cannot be actualised without an infrastructure of implementation in place. • This, inevitably, has to take the form of an Election Commission charged with the superintendence, direction and control over elections. |
| | Independence of the EC | <ul style="list-style-type: none"> • The absence of parliamentary legislation, coupled with the affirmative power vested in the Prime Minister to appoint the CEC and the ECs affect their independence. |

Positive Outcomes of the verdict

- The NJAC sought to introduce a system that would enable a healthy system of checks and balances in the appointment of judges.
- However, the judiciary was reluctant to accept this proposal as it was viewed as a threat to judicial independence, and therefore, the basic structure, and the [collegium system](#) was reinstated.
- While it sought to fiercely protect its position as per the basic structure doctrine in NJAC, it acted in complete contravention of the doctrine while deciding the present matter.
- **Undermining powers** – Through this verdict, the Court has undermined the legislature and the executive, including their powers, their roles, and the duties they owe to the Indian people.

1.4 Capital Punishment and its Alternatives

Why in news?

Recently Supreme Court asked union government data of death by hanging and a possible alternative mode of execution

What is capital punishment?

- Capital punishment, also called death penalty is execution of an offender sentenced to death by hanging after conviction by a court of law of a criminal offense.
- **Status - Death Penalty in India: Annual Statistics 2022** is a report of Project 39A of National Law University (NLU) Delhi.
- The project is inspired by *Article 39A* of the Indian constitution, which says the state should further the values of equal justice and equal opportunity by removing economic and social barriers.

- In 2022, Sessions Courts in India imposed 165 death sentence penalties
- The *State of Uttar Pradesh* had the highest number of convicts on death row, of which 32 sentences were imposed in 2022.
- This was followed by Gujarat (61) and Jharkhand (46)
- Cases involving *sexual offences* constituting the majority (51.28%) of cases in which the death penalty was imposed by trial courts in 2022

PRISONERS ON DEATH ROW



What are the provisions of capital punishment?

- According to *Section 302 of the Indian penal code, 1860*, an individual who commits murder shall be given the death penalty
- Section 194 of the IPC mentions about capital punishment
- Section 354(5) in *The Code of Criminal Procedure, 1973* states that when any person is sentenced to death, the sentence shall direct that he be hanged by the neck till he is dead.
- Crimes punishable under capital punishment are
 - Exacerbated murder
 - Offences performing in death
 - Disloyalty, spying
 - Terrorism related crimes, resulting in death
 - Military offences, not resulting in death

In India, The Air Force Act, 1950, The Army Act 1950, and The Navy Act 1957 say that execution has to be carried out either by hanging by the neck until death or by being shot to death.

What is the constitutionality of capital punishment?

- In *Deena vs. Union of India* the court held that section 354(5) of the Indian penal code prescribed hanging as mode of execution as fair, just and reasonable procedure *within the meaning of Art- 21 and hence is constitutional.*
- In *'Bachan Singh v State of Punjab'*, Supreme Court upheld the constitutional validity of the death sentence and laid down that death penalty must be surrounded only in the "*rarest of rare cases*".

Article 72

- The President shall have the commute the sentence of any person convicted of any offence where the sentence is a sentence of death.

Article 161

- Empowers the governor of a state to commute the sentence of any person convicted of any offence against a state law.

Article 21

- No person shall be deprived of his life or personal liberty except according to procedure established by law.

Protection conferred under Constitution

- *Machhi Singh Vs. State of Punjab* case provided exceptions to the rarest of rare rule and death penalty can be invoked when
 - Murder is committed in extremely brutal manner so as to arouse extreme indignation of the community
 - Murder is committed by a motive which shows total depravity and meanness
 - The crime is enormous in proportion

What are alternative methods to capital punishment?

Alternative methods	Provisions
Electrocution	A method of execution in which the condemned person is subjected to a heavy charge of electric current

Lethal Gas	A method of executing condemned prisoners by lethal gas.
Lethal injection	A method of executing condemned prisoners through the administration of one or more chemicals that induce death
Firing squad	A group of soldiers who are ordered to shoot and kill a person who has been found guilty of committing a crime

What is the issue?

- **Stance of supreme court** - The Supreme Court (SC) asked the Union government the data for the capital punishment
- **Stance of union government** - The capital punishment is not cruel or inhuman so should be practiced.
- The capital punishment accounts for the least number of botched-up executions.
- In its 187th report in 2003, the *Law Commission of India recommended* that -
 - Section 354 (5) of the CrPC should be amended by providing an alternative mode of execution of death sentence by "lethal injection until the accused is dead."
- The *35th Report of the Law Commission (1967)* had noted that while electrocution, use of a gas chamber and lethal injection were considered by some to be less painful.
- In 2018 the union government had argued that death by hanging was the *only viable option* to execute a death warrant.

1.5 The Road to End Tuberculosis (TB)

Why in news?

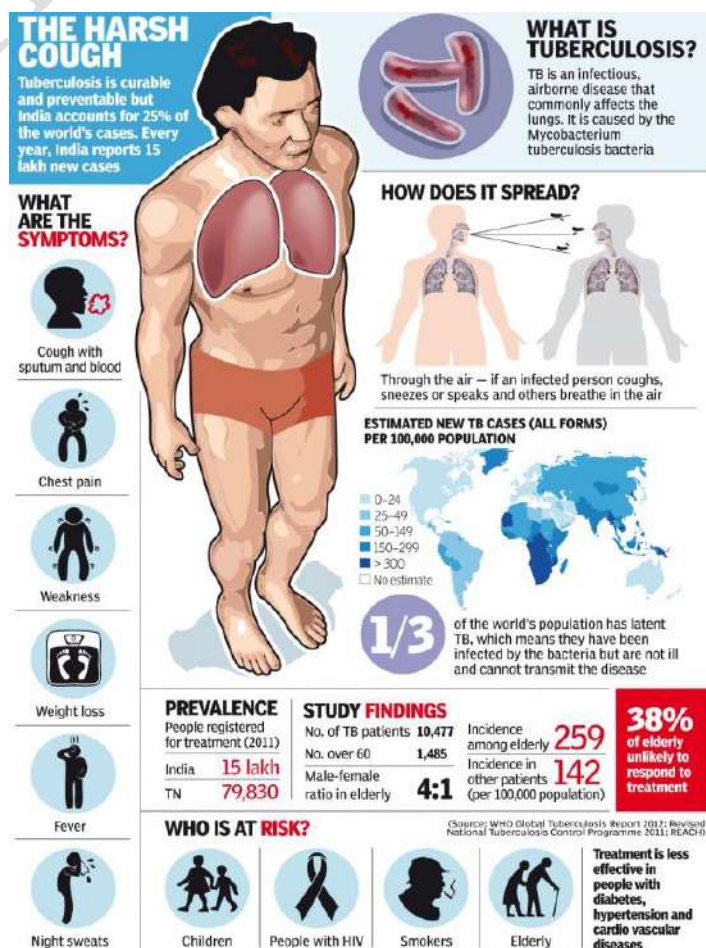
India's G20 presidency this year and the Varanasi Stop TB board meeting could provide a perfect platform to end TB.

What is Tuberculosis?

- **About** - Tuberculosis is a serious infectious and contagious disease that generally affects lungs.
- **Cause** - TB is caused by a bacterium known as Mycobacterium tuberculosis.
- **Transmission** - TB bacteria spread through the air from one person to another
- When a person with TB disease of the lungs or throat coughs, speaks, or sings, TB bacteria can get into the air.
- **Symptom** -
 - Pain in the chest
 - Coughing up blood and sputum (phlegm from deep inside the lungs weakness or fatigue
 - Weight loss and loss of appetite
 - Chills and fever
 - Sweating at night
- **Treatment** - Drugs include Isoniazid (INH), Rifampicin, Pyrazinamide and Ethambutol (HRZE) in daily doses

Status of TB in India

- Most of the TB statistics for India are collected by the government National Tuberculosis Elimination Program
- The NTEP then passes their figures to the World Health Organisation (WHO).



- The WHO TB statistics for India for 2021 give an estimated incidence figure of 2,590,000 million cases

What are the measures taken by India to eradicate TB?

- The National Tuberculosis Elimination Programme (NTEP)** - Aims to strategically reduce TB burden in India by 2025.
- It was previously known as Revised National Tuberculosis Control Programme (RNTCP).
- The government reached over a billion people in 632 districts/reporting units.
- The National Strategic Plan for TB Elimination** – It was launched to achieve the target of ending TB by 2025 in a mission mode.
- It is a multi-pronged approach which aims to detect all TB patients with an emphasis on reaching TB patients seeking care from private providers and undiagnosed TB in high-risk populations
- Ni-kshay Poshan Yojana(NPY)(Nutritional Support to TB)** - It helps to meet the nutritional requirements of TB patients, especially the underserved
- From 2018 till present, around Rs. 1,707 crore has been disbursed to more than 65 lakh people on TB treatment across the country
- Patient Provider Support Agencies (PPSA)** - To engage the private sector, Patient Provider Support Agencies (PPSA) have been rolled out across 250 districts through the domestic setup and JEET initiative
- Universal Drug Susceptibility Testing (UDST)** - To ensure every diagnosed TB patient is tested to rule out drug resistance before or at the time of treatment initiation itself.
- Pradhan Mantri TB Mukh Bharat Abhiyaan** - To bring together all community stakeholders to support those on TB treatment and accelerate the country's progress towards TB elimination.
- Ayushman Bharat - Health and Wellness Centres** - To decentralize comprehensive primary healthcare including TB care services at the grassroots level.
- Bedaquiline and Delamanid** -Newer drugs like Bedaquiline and Delamanid have also been made available for management of DRTB.

An estimate of 2.8 million TB cases with TB killing more than 4,00,000 occur in India every year

Multidrug-resistant TB (MDR TB) is caused by an organism that is resistant to at least isoniazid and rifampin, the two most potent TB drugs

What are the challenges to eradicate TB?

- Lack of clarity on definitions of 'end' TB
- Poor primary health-care infrastructure in rural areas
- Unregulated private health care leading to widespread irrational use of first-line and second-line anti-TB drugs
- Unpasteurized milk or dairy products made from raw milk is another potential source of TB for humans
- Lack of awareness
- Multidrug-resistant TB (MDR TB)

End TB Strategy

World Development Report (1993)

The Global Fund

The Stop TB Partnership

SDG 3

- It is given by World Health Organization (WHO)
- It serves as a blueprint for countries to reduce TB incidence by 80%, TB deaths by 90%, and to eliminate catastrophic costs for TB-affected households by 2030.

- Published by the World Health Organization (WHO).
- The 1993 World Development Report labelled TB treatment for adults as the best buy among all developmental interventions.

- A worldwide movement to defeat HIV, TB and malaria and ensure a healthier, safer, more equitable future for all.

- Brings together expertise from a broad spectrum of country, regional, and global partners in our shared mission to revolutionize the TB space and end TB by 2030

- To end TB epidemic by 2030

What is the need of the hour?

- Development and wide use of an adult TB vaccine
- To lower production cost so as to make few available anti-TB drugs to everyone
- Inventing injection-free and oral pills for TB
- Use of AI-assisted handheld radiology with 90-second reporting and 95% accuracy for diagnosing TB.

Global Measures to eliminate TB

G.S PAPER I

2. HISTORY/ART & CULTURE

2.1 Adopt a Heritage Scheme

Why in news?

Private firms, companies, and public sector units can enter into agreements with the Union Ministry of Culture to adopt and maintain State-owned archaeological sites or monuments.

What is Adopt a Heritage Scheme about?

- It is an initiative of the Ministry of Tourism, in collaboration with the Ministry of Culture and the Archaeological Survey of India.
- The government invites entities, including public sector companies, private sector firms as well as individuals, to develop selected monuments and heritage and tourist sites across India.
- It includes providing and maintaining basic amenities, including drinking water, ease of access for the differently abled and senior citizens.
- The sites/monument for this scheme will be selected on the basis of tourist footfall and visibility.
- Businesses that enter such agreements are going to be known as Monument Mitras.
- The Monument Mitras are selected by the 'oversight and vision committee,' co-chaired by the Tourism Secretary and the Culture Secretary.
- The corporate sector is expected to use corporate social responsibility (CSR) funds for the upkeep of the site.
- The Monument Mitras, in turn, will get limited visibility on the site premises and on the Incredible India website.
- The oversight committee also has the power to terminate a memorandum of understanding in case of non-compliance or non-performance.

What are the issues with the scheme?

- Lack of experience** – Permitting a watch company without expertise in bridge engineering to maintain a colonial era bridge in Morbi, Gujarat, possibly contributed to heart-wrenching tragedy.
- Sarnath initiative** – The current plan also side lines the mandate of the Archaeological Survey of India (ASI) and abandons the Sarnath Initiative.
- Redundancy** – Monuments selected, such as, the stupas at Sanchi, the Brihadeshwar temple in Thanjavur, and Akbar's palace city at Fatehpur Sikri, already have tourist infrastructure.
- Livelihood of local communities** – The scheme undermines the local communities and their relationships with historical sites.
- Guided tours led by employees of large businesses, may endanger livelihoods of those who have lived near the site and made a living by regaling visitors with stories of its colourful past.
- Night tourism** – Keeping these spots open from dawn to dusk has limited footfall and thus preserved them from excessive wear and tear.
- Night tourism will also pull electricity away from rural homesteads and hospitals.
- Monuments not adopted by Monument Mitras** – The Uttar Pradesh government has started turning over such monuments to the Tourism Department to convert them into hotels.
- They include Chunar Fort, a citadel overlooking Barwasagar Lake, and several residences built by Awadh's Nawabs.
- Corporate interest over historical preservation** – The move by U.P government confirms that the scheme is continuing to place reckless tourism and corporate interests over historical preservation.

The Sarnath initiative is the guidelines devised by the ASI, the Getty Trust, U.S., the British Museum, and National Culture Fund to safe keep excavated objects and present them to visitors in an engaging manner.

How can we overcome the challenges?



2.2 Ancient Monuments and Archaeological Sites and Remains (AMASR) (Amendment) Bill

Why in news?

The central government is expected to reintroduce the AMASR (Amendment) Bill in Parliament during the second half of the Budget Session.

What qualifies as an Ancient Monument (AM) and Archaeological Sites (AS) and remains?

- **Ancient Monument** – AM is defined as any structure, erection, or monument, or tumulus, or cave, rock-sculpture, inscription, or monolith which is of historical, archaeological, or artistic interest.
- Such things should have been in existence for not less than 100 years.
- **Archaeological Sites** – AS mean any area which contains ruins or relics of historical or archaeological importance which have been in existence for not less than 100 years.

Why does the government want to amend the AMASR Act?

- The prohibition of new construction within prohibited areas of a protected monument is adversely affecting the various public works and developmental projects of the central government.

What is the current status of the Amendment Bill?

- The Amendment Bill was introduced in 2017 and was passed in the Lower House in 2018 and later referred to a Select Committee.
- **Report of the Committee** – It recommended deciding the area limit for prohibiting construction on a case-by-case basis rather than drawing a blanket limit of 100 metres.
- The committee also questioned the definition of public works specified in the Amendment.
- The committee noted that the definition does not cover public utility projects, like Metro construction, that do not specifically fall under safety and security.
- The committee recommended the passage of the Act after consultation with central and State governments and various relevant departments.

Aim of AMASR

- The AMASR Act was passed by the Parliament in 1958.
- It aims protection and preservation of archaeological and historical monuments and sites.
- It also provides for the regulation of archaeological excavations and for protection of sculptures, carvings and other such objects.

Amendments to AMASR

- It includes, allowing the construction of public works in prohibited areas, and the approval and impact assessment of such public works.
- The original Act prohibits construction in an area of 100 metres around protected monuments, and the central government can extend this area beyond 100 metres.
- Now, the government will be allowed to take up infrastructure projects for public works in this prohibited area.

Public Works

- The Bill introduces a definition of public works.
- It defines public works as the construction works related to infrastructure financed.
- Such work should be carried out by any department of the central government for public purposes, such as the safety or security of the public at large.

Assessment

- The Bill seeks to add the archaeological impact, visual impact and heritage impact assessment of the proposed public works to the functions and powers of the authority.

3. SOCIAL ISSUES

3.1 The importance of women-led digital solutions

Why in news?

The theme for International Women's Day 2023 is 'DigitALL: Innovation and Technology for Gender Equality', since women are left behind in knowledge of digital skills and access to technologies.

Which areas required women led digital solutions?

- **PM POSHAN** – Under the [scheme](#), 3 million cook-cum-helpers play a critical role in preparing and providing hot, cooked meals to millions of school children.
- Nutritional improvement through the [mid-day meals scheme](#) is inextricably linked with food safety.
- Unsafe food served in schools has the potential to create a vicious cycle of disease and malnutrition, impacting school children who eat these meals.
- **Digital literacy & food security** – The [National Family Health Survey-5 \(NFHS-5\)](#) indicates that 54% women and 64% children in India's urban areas are *anaemic*.
- In a pilot on financial literacy and digital literacy being implemented by the WFP with women *self-help groups* across low-income groups, nearly 70% of women wanted to acquire new skills.
- The women in training will be able prioritise access to financial services, manage their own economic activities efficiently, take informed decisions on their livelihoods, food security, & nutrition.
- **Gender-responsive approach** – India accounts for *half the world's gender digital divide* given that only a third of all Internet users in the country are women.
- **NFHS-5** – It shows that more than 18% of women between 15 and 49 years have a low body mass index while more than half the pregnant women in the same age group are anaemic.
- Access to digital literacy and platforms would create awareness about the gap and needs in the populations that are often on the margins of the digital revolution.

The United Nations World Food Programme (WFP) in partnership with the Governments of Odisha and Rajasthan has rolled out technology-based training modules.

In Asia-Pacific, India has the widest gender gap of 40%, with Less than 32% of women in India own a mobile phone compared to over 60% of men.

What is the way forward?

- The women led digital solutions will infuse fresh energy and confidence in how women perceive and deliver their roles as nutrition champions.
- Women can harness digital tools for improving nutrition schemes and initiatives, while also using them to create economic opportunities that ensure long-term food and nutrition security.
- The need for inclusive technology and digital education is essential for a sustainable future.

3.2 Gender Gap in STEM

Why in news?

Women's lack of access to technology and digital tools makes them less likely to be a part of the wider domains of Science, Technology, Engineering and Mathematics (STEM).

What is STEM?

- The acronym was introduced in 2001 by scientific administrators at the U.S. [National Science Foundation \(NSF\)](#).
- The NSF has predicted that 80% of the jobs created in the next decade will require some form of math and science skills.
- STEM is a [curriculum based idea of educating students](#) in 4 specific disciplines, in an interdisciplinary and applied approach.
- India is one of the countries that produce the highest number of scientists and engineers.

Under Article 51A of the Constitution of India, it is the duty of every Indian citizen to develop scientific temper, humanism and the spirit of inquiry and reform.

Why does women's underrepresentation in STEM fields matter?

- Across the world, there has been a marked absence of women in the professional realm of STEM subjects, including the IT sector, environment and climate, medical sciences, etc.

- **Lucrative for workers** – A typical STEM worker earns two-thirds more than those employed in other fields, according to Pew Research Centre.
- **Pay gap** – Therefore, the underrepresentation of women in STEM impacts the overall gender pay gap as well.
- Women are typically overrepresented in lower-paying jobs and underrepresented in higher-paying jobs such as in STEM fields.

What is the gender gap in STEM?

- **Gender divide** – Globally, 18% of girls in higher-level education are pursuing STEM studies, compared with 35% of boys.
- Within the STEM fields, there lies a gender divide, with similar numbers of boys and girls pursuing natural sciences while far more boys looked to engineering, manufacturing and construction.
- **Low enrolment** – In India, the enrolment of girls in engineering programmes is significantly lower when compared to their male counterparts.
- However, out of students enrolled in science courses at UG, PG, MPhil and PhD levels, women at 53% of enrolment outnumbered men.
- These gains, though, don't necessarily mean there will also be an increase in employment, because of multiple factors.

India	In India, more than 50% of illustrations in math and science textbooks in primary show boys and only 6% show illustrations of girls.
The US	26% of tech start-ups have at least one female founder.
Europe	Only 21% of tech founders are female.
The UK	1/4th of girls are put off a career in tech as it is too male-dominated and only 22% can name a famous female working in the field.

Status of Gender gap in STEM

Why does the gap exist?

- **Societal attitude** – The general societal attitude on women's education does not encourage families to invest in it as much as they do for boys.
- **Bias in curriculum** – UNICEF points to gender bias in curricula.

3.3 Migrant Crisis

Why in news?

The recent case of alleged assault on migrant workers in Tamil Nadu has once again brought attention to migrant workers and the problems they face.

Who are migrants?

- **Migrant** – A person who moves away from his place of usual residence, within a country or across an international border, temporarily or permanently, for a variety of reasons.
- Migrants are defined as those for whom the last usual place of residence any time in the past is different from the present place of enumeration.
- The term includes a number of well-defined legal categories of people, such as migrant workers.

What is the legal framework for migrant welfare?

- The Inter-State Migrant Workmen Act, 1979 looks into the welfare of the labourers.
- The Act mandates that the establishment which proposes to employ migrant workers be required to be registered with destination states.
- Contractors will also have to obtain a licence from the concerned authority of the home states as well as the host states.
- However, in practice, this Act has not been fully implemented.
- This Act has been subsumed into the four broad labour codes notified by the Centre:
 1. The Code on Wages, 2019
 2. The Industrial Relations Code, 2020
 3. The Code on Social Security, 2020

4. The Occupational Safety, Health and Working Conditions Code, 2020.

- These have not been implemented yet.

What is the data on migration?

- **Census** – 2011 census reported the number of internal migrants in India at 45.36 crore, making up 37% of the country's population.
- This number included both *inter-state migrants and migrants within each state* and the annual net migrant flows amounted to about 1% of the working age population.

PATTERNS OF MALE OUT-MIGRATION



17 districts account for 25% of male out-migration in the country. The map shows 16; Ganjani in Odisha is not mapped.

Source: Customised from the Registrar General of India, based on Census 2001 in the Report of Working Group on Migration, 2017

SHARE OF MIGRANT WORKERS AMONG TOTAL WORKERS BY MAJOR SECTORS

Sector	RURAL		URBAN	
	Male	Female	Male	Female
Primary	4%	75%	20%	65%
Manufacturing	13%	59%	38%	51%
Public Services	16%	69%	40%	56%
Construction	8%	73%	32%	67%
Traditional Services	10%	65%	29%	55%
Modern Services	16%	66%	40%	52%
Total	6%	73%	33%	56%

Source: NSS 2007-08, Report of the Working Group on Migration, 2017

- **CMM** – Developed states take positive Cohort-based Migration Metric (CMM) values reflecting net immigration.
- A report, *Migration in India 2020-21*, released by the Ministry of Statistics and Programme Implementation, reported that 0.7% of the country's population was recorded as a temporary visitor.
- While females recorded a higher share of migration rate of 47.9%; 48% in rural and 47.8% in urban areas, migration rate for males was 10.7% with 5.9% in rural and 22.5% in urban areas.

Which states have tried to implement the Inter-State Act?

- **MoU** – In 2012, with the help of the *International Labour Organisation*, a MoU was signed between *Odisha and Andhra Pradesh* to track labourers migrating.
- **Facilitation centres** – Kerala has set up facilitation centres for migrant workers whom the state refers to *as guest workers*.

Temporary visitors are defined as those who arrived in households after March 2020 and stayed continuously for a period of 15 days or more but less than 6 months.

What is the Jharkhand migrant crisis and how did it respond to the situation?

- Jharkhand government started thinking about migrant labourers' welfare during reverse migration in the pandemic, and found that roughly 9 lakh labourers had returned to Jharkhand.
- **SRMI** – Jharkhand started the Safe and Responsible Migration Initiative (SRMI) in 2021, aiming at enabling systemic registration of migrant workers for monitoring and analysis in the source and destination districts.
- The priority of SRMI is to generate data and then map the labourers who move out to several states for work.

3.4 Protection of Domestic Workers in India

Why in news?

In recent times, the violence against domestic workers have increased drastically.

Who are domestic workers?

- **Domestic workers** - According to International Labour Organisation, domestic workers are those workers who perform work in or for a private household or households.
- They provide direct and indirect care services, and as such are key members of the care economy
- **Domestic work** - According to ILO, domestic work refers to housework such as sweeping, cleaning utensils, washing clothes, cooking, caring of children and such other work which is carried out for an employer for remuneration.
- **Status of domestic workers in India** - As of 2012, 39 lakh people were employed as domestic workers, of which at least 26 lakh were women
- A Bengaluru-based study in 2016 found 75% of domestic workers were from Scheduled Castes, 15% from OBCs and 8% from Scheduled Tribes.
- More than 12.6 million domestic workers in the country are minors, with 86% of them being girls.
- Moreover, 25% of underage domestic workers were below 14 years.

What are the issues faced by domestic workers?

- Informal in nature
- Unpaid and underpaid
- Have no legal contract
- Have ill-defined work hours
- Face discrimination and violence, sexual harassment, and exploitation
- Face discrimination at the hands of placement agencies (agencies recruiting domestic workers) and/or traffickers
- Violence against domestic workers
- Ambiguity over domestic worker's data

The ILO Forced Labour Convention, 1930 defines forced labour as work which is exacted from any person under the menace of any penalty and which is not offered voluntarily.

What are the international measures to protect domestic worker?

- **Domestic Workers Convention (No. 189)** - ILO enacted Domestic Workers Convention (No. 189) in 2011 to protect domestic workers.
- **International Domestic Workers Day - June 16th**, celebrating the 2011 passage of the International Labour Organization Convention 189 for Decent Work for Domestic Workers.

Unorganized Sector Social Security Act, 2008 - The Act provided the first legal recognition for domestic workers.

Code on Social Security, 2020 - The code replaced the Unorganized Sector Social Security Act, 2008 and is yet to take effect.

Child Labour Act, 1986 - The government prohibited minors from entering domestic housework in 2006, listing it as a form of hazardous child labour.

Sexual Harassment of Women at Workplace Act, 2013 - Includes domestic workers as a specific category of workers.

Minimum Wages Act, 1948 - Andhra Pradesh, Jharkhand, Karnataka, Tamil nadu and Tripura have included the Act.

Domestic Workers Bill in 2008 - The National Commission of Women proposed the bill.

Domestic Workers' Welfare Bill 2016 - Recognised a private household as a workplace, and broader definition of wages.

National Domestic Worker Policy - To regulate placement agencies and include domestic workers under existing laws.

Measures taken by India

- **Your Work Is Important** - ILO has launched a campaign "Your Work Is Important" to generate public awareness

What is the need of the hour?

- The placement agencies need to be regulated.
- The government need to link up with social workers for protecting the domestic.
- The domestic workers protection act need to be passed.
- There is a need for authentic data for domestic workers.

3.5 A Sustainable Model for Women's Leadership

Why in news?

It is the right time to build a sustainable model for women empowerment considering 900 million adolescent girls across the world.

What is the status of women's leadership?

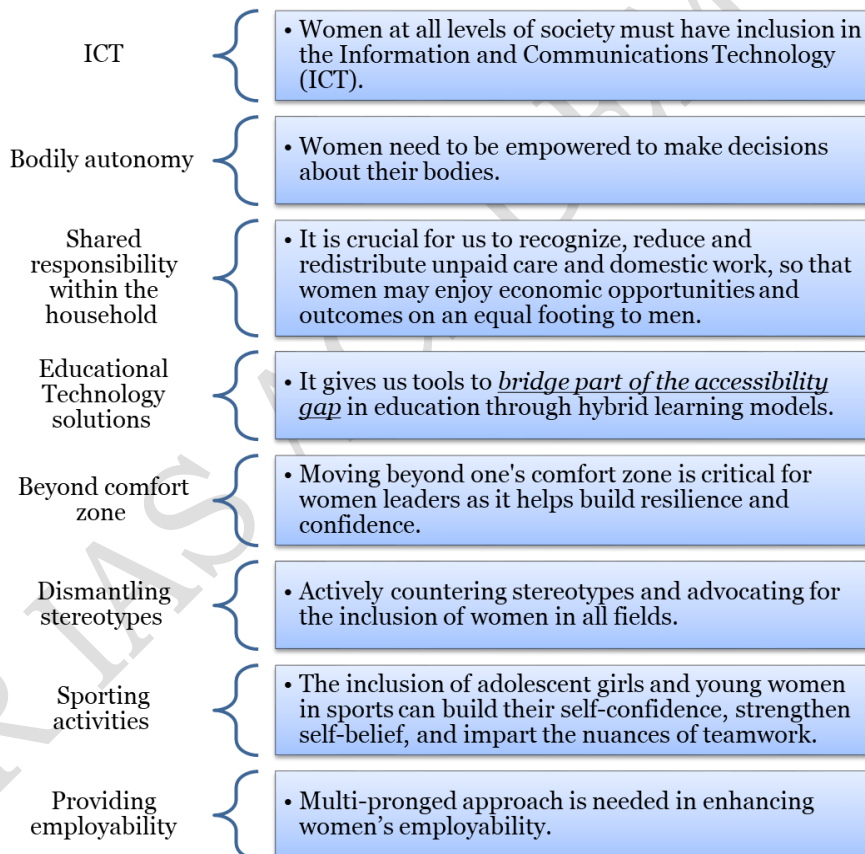
- According to the Women's World Atlas, only four countries have achieved parity between women and men in parliament.
- The world is home to 900 million adolescent girls and young women poised to shape the future of work and growth.
- The World Bank notes that over 43% of Indian STEM (science, technology, engineering and mathematics) graduates are women.

How significant is women's leadership?

- Women leadership is crucial to tackling climate crisis.
- Women leadership leads to peaceful foreign diplomacy cutting across borders.
- In government at national and more local levels, women leaders are associated with fewer deaths and faster action.
- In companies, women leaders have proven to be motivating and communicative during any crisis.

What are the barriers to women's leadership?

- Gender norms that disproportionately allocate domestic and care responsibilities to women
- Representation of men as leaders of STEM (Science, Technology Engineering, and Mathematics), finance, and entrepreneurial fields
- Inadequate maternity leave
- Lack of childcare facilities in the workplace



Key elements for Women's Leadership

3.6 Wide Disparities in Human Development in India

Why in news?

Despite increased awareness about suicide the suicide rates are increasing and has to be addressed.

What is HDI?

- Human development index (HDI) is a composite statistical measure to evaluate and compare the level of human development in different regions around the world.
- HDI was created by the United Nations Development Programme (UNDP) in 1990
- The dimensions of HDI are
 - Long and healthy life
 - Knowledge

63 million people are pushed into poverty because of healthcare costs every year, almost 2 people every second.

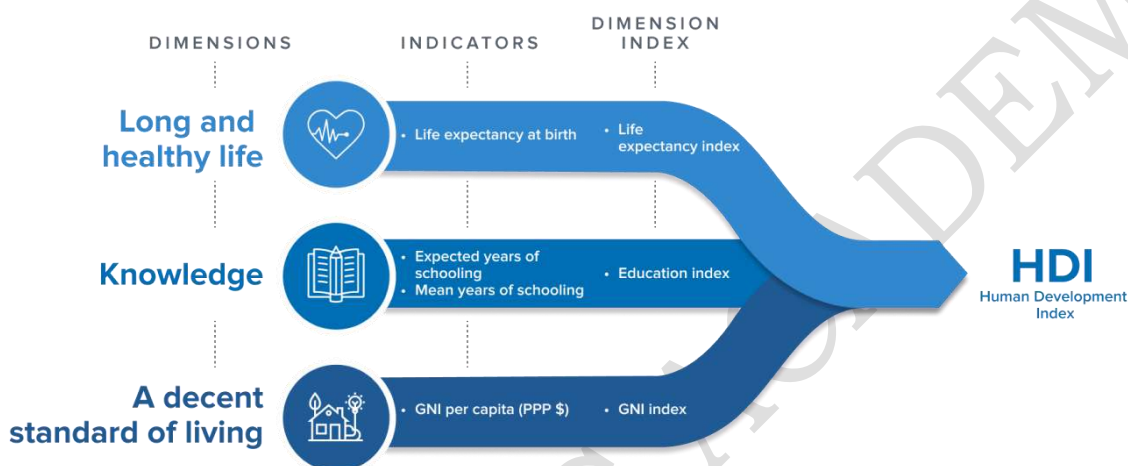
3. A decent standard of living
 - HDI scores range from 0 to 1, with higher values indicating higher levels of human development.

What is the status of subnational HDI of India?

- There is wide disparities in human development across the states in India

According to the Human Development Report of 2021-22

- The five States with the highest HDI scores are Delhi, Goa, Kerala, Sikkim, and Chandigarh.
- The bottom five States are Bihar, Uttar Pradesh, Madhya Pradesh, Jharkhand, and Assam, with medium levels of human development.
- Despite having the highest SGDP per capita among larger States, Gujarat and Haryana have failed to translate this advantage into human development and rank 21 and 10, respectively



What are the reasons for the wide disparities among the states?

- **Income inequality** - The top 10% of the Indian population holds over 77% of the wealth.
- **Low quality in service provided by government** - While the country has achieved near-universal enrolment in primary education, the quality of education remains low.
- **Healthcare** - Healthcare being considered as luxury good causes financial burden to poor.

According to the Human Development Report of 2021-22, India ranks 132 out of 191 countries, behind Bangladesh (129) and Sri Lanka (73).

What is the need of the hour?

- **Health care infrastructure** - Robust healthcare infrastructure is needed to eradicate poverty and reduce inequalities.
- **High literacy rates** - High literacy rates is essential for human development.
- **Social protection schemes** - There is a need for more social protection schemes.

G.S PAPER II

4. INDIAN POLITY

4.1 Digital India Bill

Why in news?

The act which is a successor to the Information Technology (IT) Act, 2000, will impact a host of entities on the Internet, including social media, e-commerce, and artificial intelligence-based platforms.

What is the IT Act, 2000?

- It is the primary law in India for *matters related to cybercrime and e-commerce*, giving *legal sanction to e-commerce and transactions*, enabling e-governance, and preventing cybercrime.
- Under the law, for any crime involving a computer or network located in India, foreign nationals can also be charged.
- The act gives legal recognition to digital signatures.

Section 66A of the [IT Act](#).

What is the new law for the Internet?

- The IT Act needs an update since it was framed for an Internet era that looked very different from the Internet of today.
- **Objectives** – To ensure an open and safe Internet in the country, to ensure users' rights and reduce risks for them online, accelerate the growth of technology innovation.
- The Bill is a key pillar of an overarching framework of technology regulations the Centre is building, including:
 1. Draft Digital Personal Data Protection Bill, 2022
 2. Indian Telecommunication Bill, 2022
 3. Policy for non-personal data governance

What is safe harbour?

Safe harbour	Due diligence	Origin	Web 2.0
• As given under <i>Section 79 of the IT Act, 2000</i>, it is the <i>legal immunity</i> that online intermediaries enjoy against content posted by users on their platforms.	• This is available as long as these platforms abide by certain due diligence requirements, such as censoring content when asked by the government or courts.	• The concept originally came from <i>Section 230 of the United States' Communications Decency Act</i>, which has been termed one of the foundational laws behind the modern Internet.	• It is one of the main reasons behind the meteoric rise of Internet giants such as Facebook that have defined the Web 2.0 era where users can post content on the internet.

What is the need to revisit the norm?

- **Complex intermediaries** – The idea behind revisiting the concept of the safe harbour is that the intermediaries have become more complex.
- Hence, there is a need to classify different types of intermediaries and form relevant regulations for each of them.
- **IT Rules of 2021** – The government has reined in the safe harbour by introducing additional due diligence requirements.
- Such requirements include, appointing India-based employees to cooperate with the government and address users' queries.

Cybercrimes	• The proposed law will also regulate a range of crimes include cyberbullying, doxxing, and identity theft.
Misinformation	• The weaponisation of misinformation under the garb of free speech will not be entertained and will be regulated under the Bill.
Adjudicatory mechanism	• An effective mechanism that is easily accessible, deliver timely remedies, resolve cyber disputes, and create cyber jurisprudence will also be explored under the Digital India Bill.

Other provisions of Digital India Bill

What is the way forward?

- Countries around the world are reconsidering their respective safe harbour norms, including in the US where the concept originated.
- Regulation of hate speech and disinformation on the Internet is a must and intermediaries, including digital news media and social media platforms, have an accountable role to play.
- Modern regulations to tackle issues related to misinformation, problematic content and the side effects of the new form of the Internet are a must.
- However, they should still retain first principles of safe harbour without whittling down their core.

4.2 Changes to Prevention of Money Laundering Act 2002 (PMLA)

Why in news?

Recently finance ministry placed all transactions involving virtual digital assets (VDA) under the purview of PMLA.

What is the Prevention of Money Laundering Act (PMLA)?

- **Aim** – The main focus of the PMLA is
 1. To prevent money-laundering
 2. To provide for confiscation of property derived from or involved in money-laundering

The Enforcement Directorate is the main agency probing allegations under PMLA.

Key features of PMLA

- **Confiscation of property** - The PMLA deals with the confiscation of both movable and immovable property.
- **Intermediaries** - The Act provides that every banking company, financial institution and intermediaries should maintain a record of transaction.
- **Appellate Tribunal** - The Appellate Tribunal was established by Central Government to hear appeals against the dealers of Adjudicating Authority and authorities under this Act.
- **Special Courts** - The Central Government shall constitute the Special Courts in consultation of the Chief Justice of India to try the offence of Money Laundering.
- **Location of an entity** - The third party of any entity in the country shall not be located in any country classified as 'high risk' by the [Financial Action Task Force \(FATF\)](#)

What are the recent changes in the PMLA?

Bringing five types of activities under PMLA

- Exchange between virtual digital assets (VDA) and fiat currencies
- Exchange between one or more forms of VDA
- Transfer of VDA
- Safekeeping or administration of VDA or instruments enabling control over them
- Participation in and provision of financial services related to an issuer's offer and sale of a VDA.

VDA is any data, code, number, or token generated using cryptography or another method

Fiat currencies are government-issued currency that is not backed by a physical commodity, such as gold or silver, but rather by the government that issued it.

Changes in the Prevention of Money-laundering (Maintenance of Records) Rules, 2005

- Defining the term - politically exposed person(PEP)
- Every banking company or financial institution must shall register the details of clients on the DARPAN Portal of Niti Aayog.
- The rules broadens the definition of a non-profit organization to now also include organizations that function for charitable purposes including relief to the poor, education or medical relief etc.
- The new rules add more data retention requirements to NGOs

'Politically exposed persons' (PEPs) - Individuals entrusted with prominent public functions by a foreign country, including heads of states or governments, senior politicians, senior government or judicial or military officers, senior executives of state-owned corporations, and important political party officials.

What are the impacts of changes in PMLA?

Impact on Crypto exchanges

- If activities related to exchange of VDAs are carried out for or on behalf of another person, it shall be regarded as an activity under PMLA
- The crypto-entities are required to verify the identity of clients and beneficial owners, and maintain records of transactions for 5 years from the date of transaction
- The crypto exchanges must maintain records of identity, files and correspondences of clients for 5 years

Impact on Foreign portfolio investors

- FPIs will have to rework the mechanism for maintenance of records because of the change in threshold for determining beneficial ownership

Financial Action Task Force

- Financial Action Task Force (FATF), commonly referred to as the world's terrorism financing watchdog, is an inter-governmental decision-making body.
- It was established in 1989 during the G7 Summit in Paris to develop policies against money laundering.
- Its Secretariat is located in **Paris**.
- It set standards and promotes effective implementation of:
 - Legal, regulatory and operational measures for combating money laundering.
 - Identify national-level vulnerabilities with the aim of protecting the international financial system from misuse.
- In 2010, **India became the 34th member country** of FATF.
- FATF maintains two types of lists.
 - **Black List** - Countries known as Non-Cooperative Countries or Territories (NCCTs) are put in the blacklist.
 - These countries support terror funding and money laundering activities.
 - The FATF revises the blacklist regularly, adding or deleting entries.
 - **Grey List** - Countries that are considered safe haven for supporting terror funding and money laundering are put in the FATF grey list.

4.3 Karnataka's Reservation Policy

Why in news?

Recently the Karnataka government announced internal reservation in the 17% Scheduled Castes quota for around 101 castes scrapping the 4% reservation for Muslims.

What is reservation?

- Reservation is all about reserving access to seats in the government jobs, educational institutions and legislatures to certain sections (SC, ST, BC, etc) of the population.
- According to constitution the reservation is provided for:
 - **SC/ST/OBC** – Advancement of Scheduled Castes (SC) and the Scheduled Tribes (ST) or any socially and educationally backward classes of citizens (E.g. OBC) or economically weaker sections (EWS) by *article 15 (4), article 15 (5) and article 15 (6)*.
 - **EWS** – Adequate representation of any backward class of citizens or economically weaker sections (EWS) in the services under the State by *article 16 (4) and article 16 (6)*
 - **Article 46** - The State shall promote with special care the educational and economic interests of the weaker sections of the people, in particular, of the Scheduled Castes and the Scheduled Tribes.

What are the changes made in the reservation policy of Karnataka?

- **OBC** – The Karnataka government scrapped the 4% quota for Muslims within the Other Backward Classes (OBC) category and distributed 2% reservation each to the Vokkaliga and Veerashaiva-Lingayat communities.
- Muslims have been placed under the **Economically Weaker Sections (EWS)** reservation category, where they would compete for a 10% quota.

- The government has also created four sub-categories to introduce internal reservation for different Dalit communities under the Scheduled Caste (SC) category.

Communities	Provisions
SC Left group	6% has been awarded to the 'SC Left' group which consists of the most backward of communities including Madigas.
SC Right	The less backward 'SC Right' category, which has around 25 communities such as Holeyas, got 5.5% of the quota.
Touchable communities	Touchable communities such as Banjaras and Bhois got 4.5%.
Other SC communities	Other SC communities got the remaining 1 %.

- There was no consultations from different communities.
- The [reservation](#) on the basis of religion alone is untenable, it appears that there has been no recommendation from the Karnataka State Backward Classes Commission.
- The Constitution does not allow reservation on the basis of religion alone.
- There have been judicial verdicts striking down quotas for Muslims for not being backed by a proper study is in appropriate.
- The large sections of Muslims have not reached a level of social and educational advancement so exclusion of Muslims from the BC category is non-advisable.

Reservation Category	Reservation Quota (%)
ST	7.5
SC	15
OBC	27
EWS	10
Total	59.50%

What is status of reservation?

- The Supreme Court of India ruled in 1992 that reservations could not exceed 50%.
- The recent amendment of the constitution exceeds 50% and also there are state laws that exceed this 50% limit.
- On November 2022 Supreme Court of India in **Janhit Abhiyan vs Union Of India** upheld the validity of the 103rd constitutional amendment carried out to provide legal sanction carve out 10% reservation for the economically weaker sections.

4.4 The Case of Defamation

Why in news?

Recently Mr. Rahul Gandhi has been sentenced to 2 years in prison for criminal defamation and disqualified from his membership in the Lok Sabha.

What are the reasons for disqualification?

- Rahul Gandhi was disqualified for violating the provisions of
 - Article 102 (1) (e) of the Constitution of India
 - Section 8 (3) of the Representation of People Act, 1951
- Article 102** - It deals with the disqualification of MPs from either house of the Parliament.
- Article 102 (1) (e)** - It deals with disqualification under any law made by Parliament.
- RPA** - The Representation of the People Act (RPA), 1951 is an act of Parliament of India deals with:
 - Elections** - Conduction of election of the Houses of Parliament and state legislative assemblies.
 - Disqualifications** - The qualifications and disqualifications for membership of Houses of Parliament and state legislative assemblies.
 - Offences** - Other offences, decision of doubts and disputes for the election for Houses of Parliament and state legislative assemblies.
- Section 8 of the RPA, 1951** - The Section (8) of the RPA, 1951 consists of the following provisions:

1. **Section 8 (1)** – It includes specific offences such as promoting enmity between two groups, bribery, and undue influence or personation at an election.
2. **Section 8(2)** – It lists offences that deal with hoarding or profiteering, adulteration of food or drugs and for conviction and sentence of at least six months for an offence under any provisions of the Dowry Prohibition Act.
3. **Section 8(3)** – A person convicted of any offence and sentenced to imprisonment for not less than two years shall be disqualified from the date of such conviction and shall continue to be disqualified for a further period of 6 years since his release.
4. **Section 8(4)** – The disqualification takes effect only after 3 months have elapsed from the date of conviction.

- However, in the landmark 2013 ruling in '**Lily Thomas V Union of India**', the Supreme Court made *Section 8(4) of the RPA as unconstitutional*.

What is defamation?

- **Section 499 of IPC** – It defines '**defamation**' as being committed through
 1. Words that are spoken or intended to be read
 2. Signs or visible representations which are a published or spoken
 3. Imputation concerning any person if the imputation is spoken or published with
 - i. The intention of causing harm to the reputation of the person
 - ii. Reason to believe that the imputation will harm the reputation of the person

Defamation does not fall in Section 8 (1) The Representation of the People Act (RPA), 1951.

How has the judiciary inferred?

- In **Shreya Singhal V. Union of India** case the Court found the criminal defamation laws to be fair and reasonable.
- **Case law** - It was observed that the expression collection of persons used in the IPC, has to be an identifiable class or group.
- In such case the particular member who initiates criminal proceedings for defamation must demonstrate personal harm or injury by the alleged defamatory statement.
 - Case law is the law based on decisions made by judges in earlier legal processes (cases).

Defamation as a Tort (or)
Civil Offence

Law of Torts – Civil Defamation under the Law of Torts focuses mainly on libel (i.e., written defamation) and not on slander (i.e., spoken defamation).

To establish that a statement is defamatory or libelous, it must prove to be - False, Written, Defamatory, and Published.

Defamation as a Crime
(or) Criminal Offence

Section 499 IPC – Defamation is defined as a criminal offense under *Section 499 of the Indian Penal Code, 1860*. The types of insult may also be known as Slander or Libel.

Slander – A slander is a form of defamation that is communicated verbally.

Libel – Libel is the form of insult which is represented in a pictorial or a written form.

What is the way forward?

- A modern democracy should not treat defamation as a criminal offence at all.
- Opposition parties should include abolishing criminal defamation in their agenda.

4.5 SMART-PDS Scheme

Why in news?

Recently, the Union Minister of Consumer Affairs, Food and Public Distribution emphasized every state to implement SMART-PDS.

What is SMART-PDS?

- It refers to Scheme for Modernization and Reforms through Technology in Public Distribution System.
- **It aims to** prevent leakage of food grains, increase the efficiency of the distribution chain and to ensure the availability of such provisions for migrants
- It is a system where **smart ration cards** are issued to beneficiaries of PDS, and ration is given through fair price shops to any member of the beneficiary family.

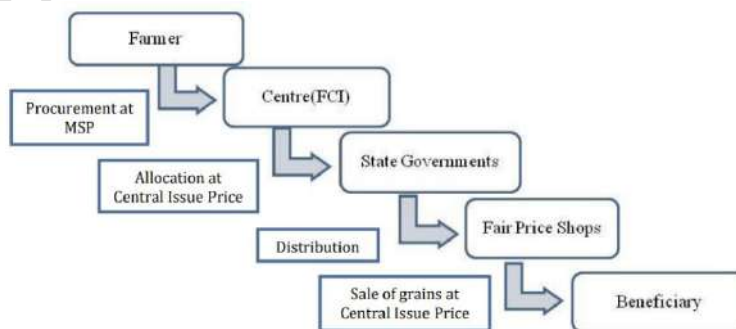
- The **fingerprint template** of the beneficiary is recorded in these smart ration cards, which records all transactions.
- It is an initiative of the Department of Food and Public Distribution (DFPD), **Ministry of Consumer Affairs, Food and Public Distribution.**
- It is a technological driven initiative that seeks to reduce human intervention and promote automation in the existing processes.

What schemes support public distribution system?

- **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)** -A food security welfare scheme announced during covid-19.
- **Open Market Sale Scheme** -To sell surplus stocks of wheat and rice at pre-determined prices through e-auction in the open market
- The scheme is implemented by Food Corporation of India.
- **Targeted Public Distribution System (TPDS)** - States were required to identify the poor for delivery of food grains and for its distribution in a transparent and accountable manner.
- **Antyodaya anna yojana (AAY)** - Aims at reducing hunger among the poorest segments of the Below Poverty Line population.
- AAY involved identification of 1 crore poorest of the poor families from amongst the number of BPL families covered under TPDS.
- **One Nation One Ration Card (ONORC)** -A scheme that will nationalize a beneficiary's ration card by a process called Aadhaar Seeding.
- Aadhaar seeding ensures that the beneficiary can pick up her or his entitled food grain from any fair price shop in the country.
- **Integrated Management of Public Distribution System (IMPDS)** – The scheme entitles food grains from any Fair Price Shop (FPS) of their choice anywhere in the country.
- **The National Food Security Act, 2013 (NFSA)** - Provides a legal right to persons belonging to eligible households to receive foodgrains at subsidised price.

What are challenges to PDS?

- Lack of credible and dynamic data on consumption and mobility patterns
- Inefficient delivery of critical central welfare schemes to the most vulnerable sections of our society
- Gaps in the implementation of the PDS related schemes
- Inaccurate identification of households and a leaking delivery system
- Error of exclusion and inclusion of beneficiaries
- Leakage of food grains during transportation to the ration shop and from the ration shop itself into the open market



What are the various reforms to be implemented in PDS?

- **Data analytics (DA)/business intelligence (BI) platforms** -Centre now plans to use the DA/BI platforms and other ICT tools and technologies and deepen PDS reforms.
- **Standardization of the PDS** -There will be a standardization of the PDS operation through the use of technology and integrating the same with various distribution agencies.
- **Technology-led reforms** -Are expected to overcome the state-level technological limitations of PDS operations concerning IT hardware, software and technical manpower.
- Technology-led reforms will also institutionalize an integrated central system for all PDS-related operations across all states/UTs.

5. GOVERNANCE

5.1 Shaping India's Data Governance Regime

Why in news?

To use India's G20 presidency to promote international cooperation in data governance there by resolving the issues concerning data governance

- **Data governance:** Data governance is managing data usage, data security, data availability, and data integrity.
- **Data sovereignty:** The term “data sovereignty” refers to the principle that a country has the right to control the collection, storage, and use of data within its borders and also to the informational self-determination of citizens over their data.

How significant is data governance?

- Increases the transparency, accountability and inclusive in nature.
- Helps in protecting the privacy of individuals.
- Helps in policy framing especially in inclusion and exclusion error management of policies.
- Creates employment opportunities.
- Helps in targeted delivery of schemes.

What are the issues related to DEPA?

- **Issues with DEPA** - If the consent management tool (DEPA) is not properly implemented or managed, there is a risk that personal information could be misused or misappropriated.
- Implementation of DEPA may be inconsistent across different sectors and jurisdictions, which could undermine its effectiveness and create confusion among citizens.

What is the need of the hour?

- India must respect and protect the fundamental right to privacy with a robust data protection law, and balance the interests of all stakeholders, including governments, businesses, and citizens for the goal of sustainable development
- To ensure that data is collected, stored, and used in a responsible, secure and accountable manner — so that a resilient data governance regime can be accomplished
- In order to realize the potential benefits of DEPA and minimize the risks, it is important that the tool is implemented in a transparent, consistent, and secure manner.
- This will require close collaboration between the government, the private sector, civil society, and other stakeholders.
- Opening of data “silos” to capture the potential wealth of data sharing between governmental offices, corporations and citizens.

Data Empowerment and Protection Architecture (DEPA)

It was launched by the NITI Aayog in 2020.

DEPA is a consent management tool.

DEPA has the potential to improve data protection and privacy for citizens by giving them greater control over the use and sharing of their personal information.

DEPA could help to build trust in digital technologies and data governance.

India Data Management Office (IDMO)

IDMO is expected to oversee and coordinate the implementation of India's digital strategies and data governance framework

It will ensure that data governance efforts are aligned with the country's values and priorities.

IDMO will frame, manage and periodically review and revise the National Data Governance Framework Policy (NDGFP).

It is to be set up under the Digital India Corporation (“DIC”) under Ministry of Electronics and Information Technology (MEITY).

Efforts taken by Government

5.2 Increasing Student Suicides in Higher Education Institutions

Why in news?

Despite increased awareness about suicide, the suicide rates are increasing and has to be addressed.

What is the status of student suicide in Higher Education?

- According to Ministry of Education, 33 students died by suicide across the IITs since 2018.
- In total, there were 61 cases of suicides during this period, across the IITs, NITs and IIMs.

Gopalakrishnan committee recommended the identification of certain “high-value datasets”, which could be shared for the purpose of encouraging innovation and ensuring national security.

- According to [National Crime Records Bureau](#) data, student suicides saw an increase of 4.5% in 2021, attributed in a large measure to the Covid pandemic and related anxieties.

What are the factors responsible for student suicides?

- Academic stress
- Family reasons
- Personal reasons
- Mental health issues
- Official apathy
- Social and caste discrimination
- 85% attendance rule – if a student fails to do so then he must repeat the course.
- Intense, high-pressure educational environment, where students are unhealthily competitive.
- Relative-grading system makes the institutions more competitive.
- Due to the combination of academic pressure and the administration's indifference towards student's issues, students resort to substance abuse.

What are the various measures taken by higher education institutions?

- Conducting workshops/seminars on happiness and wellness.
- Regular yoga sessions.
- Induction programs.
- Institutions also focus on extracurricular activities, including sports and cultural activities.
- Assign one faculty adviser per 10 students to help with their academics and monitor their progress.
- The institute appoint student counsellors for overall personality development of the students, especially those under stress.

Parents' participation - The institutes should share student performance profiles (academic and non-academic activities) with their parents.

Early detection and alert generation - Students live close to their peers and wing-mates for academic and non-academic activities.

Peers and wing-mates - The peers and wing-mates could flag changes in behavioural traits such as missed classes, reduced participation in extracurricular activities and decreased interaction.

Remedial teaching and graceful exit - Students struggling with academic pressure should be placed on academic probation for customised attention.

Third-party grievance redressal - If a student is dissatisfied with the internal grievance redressal mechanism, they should have access to a third party for resolution.

What are the various measures taken by government of India?

- MANODARPAN** - Covers a wide range of activities to provide psychological support to students, teachers and families for mental and emotional well-being
- Peer-assisted learning** - Support for students, by students, and normally takes the form of regular, timetabled, and coordinated group study sessions or workshop.
- Regional languages** - Introduction of technical education in regional languages to ease academics-related stress.

Steps to be taken

5.3 International Tourism in India

Why in news?

The Ministry of Tourism has recently organized the 1st Global Tourism Investors' Summit in New Delhi.

World Tourism Day has been held on 27 September each year since 1980.

Who is an International tourist?

- According to UN World Tourism Organization (WTO), an international tourist is a person who is on a tourism trip and is a non-resident travelling in the country of reference or a resident travelling outside of it.

What is the status of International tourism in India?

- India accounted for a mere 1.2% share in international tourist arrivals and ranked 23rd globally for the same in 2019.
- According to the Economic Survey 2021-22, the number of foreign tourist arrivals in India increased only from 0.2 crore to 1.1 crore between 1990 and 2019.
- The travel and tourism sector could generate 780 jobs in India per Rs. 1 crore of investment compared to 450 jobs in the manufacturing sector for a similar investment.

1st Global
Tourism
Investors
Summit

- To showcase investible projects and opportunities in tourism and hospitality sector in India to domestic and international investors.
- The summit organized in the backdrop of India's G20 Presidency this year.
- The Global Tourism Investor Summit 2023 portal was also launched on the occasion.

Visit India Year
2023

- It is a unique, collective movement that invites the world to explore India during 2023.

PRASHAD

- Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive (PRASHAD) scheme offers a tremendous opportunity to undertake infrastructure developments at the important pilgrimage and heritage destinations/cities.

Swadesh
Darshan
Scheme

- For integrated development of theme-based tourist circuits with the objective to develop tourism infrastructure.
- The objective for the Swadesh Darshan 2.0 scheme envisages increase in private sector investment in tourism & hospitality.

What is the need of the hour?

- Healthcare** - India must increase investment and leverage public-private partnership models in healthcare at a faster pace.
- Medical tourism** - Expanding the scope of Medical tourism to develop India into a hub for spiritual and wellness tourism, as the country has much to offer in Ayurveda and Yoga.
- Foreigner Regional Registration Office (FRRO)** - Simplify the process of registering online with the FRRO
- Help-desks** - Establishing FRRO help-desks at major Indian airports and hospitals will provide visitors with the information to complete the process online.

International
Tourism Mart

- To focus on promoting tourism in North Eastern region.

Utsav Portal

- To showcase festivals, events and live darshans across India to promote different regions of the country as popular tourist destinations worldwide.

Draft National
Tourism Policy
2022

- It aims to transform our tourist destinations to provide world class visitor experience.
- It envisages to make India, one of the top 5 destinations for sustainable and responsible tourism.
- The draft policy also envisages a *National Green Tourism Mission* to prepare a framework for sustainable and responsible tourism.

Steps taken by the Government

- Enhancing e-medical visa** - Increasing the number of annual visits allowed under an e-medical visa.
- Metaverse** - Taking advantage of metaverse, travellers can be provided 3D experience of hotel tours before booking.
- Infrastructure Tag** - Hotels, resorts, equipment, parks, etc having a project cost of more than Rs. 1 crore should be notified as 'infrastructure'.

6. EDUCATION

6.1 Irregularities in the functioning of NAAC

Why in news?

The chairperson of NAAC's executive committee, resigned after repeatedly demanding an independent inquiry into the functioning of the council.

What is the National Assessment and Accreditation Council (NAAC)?

- The NAAC is an *autonomous body* set up in 1994 under the *University Grants Commission (UGC)*.
- Functions** – NAAC is entrusted with assessing the quality of India's higher educational institutions.
- Following a multi-layered assessment process, it awards grades to colleges and universities.
- Its parameters include curriculum, faculty, infrastructure, research and financial well-being.

- The ratings of institutions range from A++ to C and if an institution is graded D, it means it is not accredited.

How is the accreditation process carried out?

- The first step involves an institute approaching the NAAC for assessment.
- Once the NAAC sets the process in motion, the applicant has to submit a self-study report (SSR) containing information related to quantitative and qualitative metrics.
- Peer review** – The data is then validated by expert teams of the NAAC, followed by spot visits by peer teams comprising assessors drawn from universities across India.

GRADE-WISE				TOP FIVE STATES (Accredited)	
Grade	Universities	Colleges	Total	UNIVERSITIES	COLLEGES
A	224	1,778	2,002	Tamil Nadu 43	Maharashtra 1,834
B	165	5,831	5,996	Uttar Pradesh 37	Karnataka 881
C	17	1,077	1,094	Maharashtra 35	Tamil Nadu 829
Total	406	8,686	9,092	Karnataka 33	Uttar Pradesh 604
				Rajasthan 31	Gujarat 492

Is a NAAC accreditation mandatory?

- Voluntary** – While the UGC has over the years issued many circulars directing institutes to mandatorily undergo NAAC's assessment, the process still remains largely voluntary.
- NEP** – The [National Education Policy \(NEP\) \(2020\)](#) has set an ambitious target of getting all higher educational institutes to obtain the highest level of accreditation over the next 15 years.

Why are so few institutes accredited?

- Poor grades** – The fear of obtaining poor grades holds institutes back from applying.
- Paramarsh** – In 2019, the UGC had launched a scheme named 'Paramarsh' to address the issue.
- Under the scheme, some of the best performing institutes were identified to serve as *mentors to at least 5 institutes* aspiring to get accredited.
- Provisional Accreditation for Colleges (PAC)** – NAAC explored the possibility of issuing PAC, under which 1 year old institutes could apply for accreditation with validity of 2 years.
- Difficult criteria** – Currently, only institutes that are *at least 6 years old*, or from where *at least 2 batches of students have graduated*, can apply and the accreditation is valid for 5 years.

Malpractices

- People with vested interests are indulging in malpractices, leading to the awarding of questionable grades to some institutions.

Input based

- The major problem with the ratings is the current approach of assessment is input-based, i.e., the NAAC relies heavily on self-assessment reports of applicant institutions.

Influence on the reviews

- The data is then validated by NAAC expert teams, followed by peer team visits to the institutions.
- It is alleged that the education institutions influence the peer review teams.

Allegations against NAAC

7. HEALTH

7.1 The hardships of a career in Ayurvedic practice

Why in news?

Despite the publicity campaigns to promote Ayurveda, Yoga, Unani, Siddha and Homeopathy (AYUSH), there is a trust-deficit in these systems.

What is AYUSH?

- AYUSH systems are based on definite medical philosophies and represent a way of healthy living with established concepts on prevention of diseases and promotion of health.
- In 1995, with the objective of optimal and focused development of these systems, the *Department of Indian Medicine and Homeopathy* was created in the Union Ministry of Health and Family Welfare.
- In 2003, this Department was re named as Department of AYUSH.
- India has a rich heritage of medical wisdom derived from the Vedas that prevailed as Ayurveda.
- AYUSH is the principal medical practice of the country for centuries, forming part of Indian ethos and culture.

The e-health market size is estimated to reach US\$ 10.6 billion by 2025.

Why AYUSH is viewed with scepticism?

- **Credibility of Ayurvedic theories** – There is widespread scepticism in the public mind about the soundness of Ayurvedic theories and the fruitfulness of its practices.
- **Archaic theories** that are apt to arouse suspicion in the minds of educated patients are peddled as sophisticated dogmas.
- **Not in line with today's science** – The Ayurveda establishment has failed to keep pace with the intellectual and scientific advances of the times.
- **Lack of scrutiny** – Treatments are made to escape straightforward experimental scrutiny because of their supposed rootedness in such theories.
- **Lack of evidence** – A major reason for the trust-deficit in Ayurveda is its diminished evidence-based quality.
- **Slow treatment** – That Ayurveda treatments are slow to heal is another common view that characterises the public image of Ayurveda.

No practical lessons

The practitioner would discover that what has been taught to them in college training is a *huge corpus of ancient medical wisdom, where only a part is practically usable.*

Lack of ecosystem

Ayurveda does not have a vibrant ecosystem of science and research, the poor practitioner has to *depend on himself to discover treatments and approaches that actually work.*

Affects reputation

The process involves a lot of trial and error with patients and predictably leads to erosion of the practitioner's reputation.

Gimmicks

Few practitioners who are using regular newspaper columns, television shows, and social media sites, entrap gullible patients.

Difficulties faced by AYUSH Practitioner

Policy making – Appropriate policy-making can solve a lot of these problems faced by the Ayurveda practitioners.

Focus on primary care - Primary-care doctors are becoming an endangered species in India's health-care system. Rejuvenating primary care is a sine qua non if a country is to secure the health of its citizens.

Training – Ayurveda graduates can contribute enormously towards this rejuvenation if trained properly.

Promotion of Ayurvedic theories – A vigorous evidence-based appraisal of Ayurvedic theories and practices in order to sift the usable from the obsolete will help the cause.

Modern medicine Ayurveda graduates must be allowed to practise modern medicine in stipulated primary care areas. These reforms would help create a workforce that can function effectively to meet the primary health-care needs of both urban and rural India.

Steps need to be taken

What is the status of AYUSH today?

- **Contemporary to modern science** – Ayurveda has grown and adapted like any other medicine or school of medicine in the world.
- **National Ayush Mission (NAM)** – It is a flagship scheme of Ministry of AYUSH.
- The basic objective of NAM is to promote AYUSH medical systems through cost effective AYUSH services.
- It envisages flexibility of implementation of the programmes which will lead to substantial

participation of the State Governments/UT.

What is the need for integrating various medicine fields?

- **China** – In the 1970s, it pushed traditional medicine, through its economic and political agenda to get total quality Chinese medicine outside China, which eventually was accepted by the world.
- **India** – India has a brand ambassador in yoga and wellness as our Prime Minister, and wellness is being accepted across the world.
- **Wellness** – We should focus on pushing wellness on a larger horizon and approach it from the point where it complements whatever is going on in allopathic hospitals.
- **Post-surgery recovery** – Ayurveda can be used to complement what hospitals do, especially after surgeries when they have to recover.

To know more [click here](#).

7.2 Rajasthan's Right to Health Bill 2022

Why in news?

The Rajasthan government recently passed the Right to health bill which faced several opposition from the doctors

What is the Rajasthan Right to Health Bill (RTH) 2022?

- Right to Health Bill (RTH) gives every resident of the state the right to avail free healthcare services to -
 - Out Patient Department (OPD) services and In Patient Department (IPD) services at *all public health facilities and any private facilities*
- The free healthcare services includes consultation, drugs, diagnostics, emergency transport, procedure and emergency care.

What are the key issues of the RTH bill?

- **Violation of Article 19(1)(g)** – Since the bill mandates the private establishments to provide free services and don't contain provision for the reimbursement
- **Violation of right to privacy** – In grievance redressal mechanism a patient's medical information may also be part of the action taken report which is published in the web portal.
- **Shortage of health workers and resources** – May affect the effective implementation of the right to health.
- **Inclusion and exclusion error** - There may be an overlap between beneficiaries under [Ayushman Bharat Scheme](#) and RTH due to certain matching eligibility criteria
- **The Financial Memorandum of the Bill** - Does not mention costs related to any of these factors (human resources, infrastructure development and public health functions) or any additional costs from providing free healthcare services to everyone in the state

Resident Doctors

- Will be entitled to *emergency treatment and care without prepayment* of any fee or charges

20 rights

- The Bill extends a total of 20 Rights to the citizens of the state

Obligations on the state government

- The Bill sets certain obligations on the state government to ensure the right to health and maintain public health

Health Authorities

- Will be set up at the state and district level
- Health authorities will formulate, implement, monitor, and develop mechanisms for quality healthcare and management of public health emergencies

Grievance redressal

- The Bill provides a web portal and helpline center for resolving complaints against denial of services and infringements of rights
- The District Health Authority will take up unresolved complaints exceeding the above timeframe

Key features of the bill

- Implementing the Right to health may increase the financial obligation of the state.

What are the various reasons for failure of government health service?

- Government expecting private hospitals to implement the government's populist policies

- Corruption
- Low health infrastructure
- Shortage of man power
- Low funding
- Poor administration

What is the way forward?

- The Rajasthan government have to effectively implement the health schemes which are already in play. The schemes are
 - Chiranjeevi Health Insurance Scheme
 - Rajasthan Government Health Scheme for government employees
 - Nishulk Nirogi Rajasthan
 - Free Test scheme
- There is lack of clarity over the definition of emergency which needs to be addressed

Article 19(1) (g) of the Constitution guarantees the right to practice any profession or carry on any occupation, trade or business

8. BILATERAL ISSUES

8.1 India-Germany Ties

Why in news?

Chancellor Scholz's 2-day visit to India, significantly coincided with the 1st anniversary of Russia's war on Ukraine.

Recent developments in [India-Germany](#) ties.

What is the impact of Russia-Ukraine war and Russia-China nexus on India-Germany ties?

- **Russia-Ukraine war** – The war has been a watershed moment in Germany's security policy, resulting in the abandonment of decades of post-war pacifism towards strategic matters.
- This is evident in Germany's pledge to boost defence spending to 2% of GDP and provide special funding to bolster the country's military.
- **China factor** – China's assertive posturing have brought into question Germany's approach of Wandel durch Handel (change through trade).
- Europe's increasing prioritisation of values-based partnerships with like-minded countries can advance India-German cooperation.
- **Trade routes** – For Germany, the stability of supply chains and trade routes linking Asia to Europe is of critical importance given its status as Europe's economic powerhouse and its reliance on exports.

What are the recent developments between the two countries?

Political relations

- India is one of the 1st countries to end the state of war with post-war Germany in 1951 and recognize the Federal Republic of Germany (FRG).
- Germany and India cooperate closely on the issue of UN Security Council expansion within the framework of G-4.

Defence relations

- High Defence Committee (HDC) meetings at the Defence Secretary level take place annually, alternately in New Delhi and Berlin.
- *India-Germany Defence Cooperation Agreement (2006)* provides a framework for bilateral defence cooperation

Economic relations

- Germany is India's largest trading partner in Europe and 2nd most important partner in terms of technological collaborations.
- Germany is the 8th largest foreign direct investor in India since 2000.

Cultural relations

- The *Indo-German Society* is engaged in promoting inter-cultural activities of both countries by conveying information about modern India to the German public.
- Max Mueller was the first scholar of Indo-European languages to translate and publish the Upanishads and the Rigveda.

Strategic relations

- India and Germany have a "Strategic Partnership" since 2001.
- India is amongst a select group of countries with which Germany has *Inter-Governmental Consultations* at the level of Head of Governments (German Chancellor and PM).

Parliamentary Exchanges

- There is an *Indo-German Parliamentary Friendship Group* where visit by Parliamentarians from both sides take place regularly

Institutional Cooperation Arrangements

- Includes *High Defence Committee, Indo-German Energy Forum, Indo-German Environment Forum*, etc.
- *Intergovernmental S&T Cooperation Agreement* was signed for fostering research projects and direct partnerships between Universities of both countries

India Germany Ties

- **Military dependence** – As New Delhi attempts to diversify from its military dependence on Russia, Berlin reassesses its long-standing arms exports policy and could become an important defence partner for India.
- **Military exercise** – The first ever *France-India-Germany* military exercise drill is slated to take place in 2024 towards enhanced security and defence collaboration.
- **Trade & technologies** – Collaboration in clean energy and green technologies has emerged as the central pillar in the partnership.
- This lead to the launch of a *Green and Sustainable Development Partnership*.
- The green and sustainable development partnership aims to effectively respond to the most pressing global challenges of today, viz. achieving the UN 2030 Agenda for Sustainable Development and addressing climate change.

The G4 formed in 2005 is a group of 4 countries such as Brazil, Germany, India, and Japan, aspiring to become permanent members of the United Nations Security Council (UNSC).

What is the way forward?

- **India's role** – Divergent positions on the war have not undermined India's regular political engagements with Europe.
- **Russia-China** – An intensification of the Russia-China axis could further embolden this alignment.
- **Germany-China** – While Germany emphasises the difficulties in decoupling from China, it is encouraging that Germany is drafting a new official China strategy amidst a wider national security strategy.
- Against the backdrop of volatile geopolitical shifts, emerging multi polar world, and Europe's enhanced courtship of India, India's ties with Germany could be vital in shaping a new global order.

8.2 India-Australia Ties

Why in news?

Australian Prime Minister announced an Australia-India education qualification recognition mechanism while on his 2 day tour in Gujarat.

What is the history of India-Australia relationship?

What are the areas of cooperation between the two countries?

- | | |
|--|--|
| Historical ties | <ul style="list-style-type: none"> • The historical ties between India and Australia started immediately following European settlement in Australia from 1788. |
| India-Australia Strategic Relationship | <ul style="list-style-type: none"> • Both countries signed a Joint Declaration on Security Cooperation in 2009. |
| Bilateral co-operation | <ul style="list-style-type: none"> • Bilateral mechanisms include Joint Trade, India-Australia '2+2', Energy Security Dialogue, JWGs on different issues etc. |
| Multilateral co-operation | <ul style="list-style-type: none"> • The inaugural Secretary-level trilateral talks between India, Australia and Japan was held in New Delhi in June 2015. • The 1st Indonesia-Australia-India Senior Officials' Strategic Dialogue was held in Bogor, Indonesia on 27th November 2017. |
| Bilateral Trade | <ul style="list-style-type: none"> • India is the 5th largest trade partner of Australia with trade in goods and services. |
| Civil nuclear co-operation | <ul style="list-style-type: none"> • A Civil Nuclear Cooperation Agreement between the two countries was signed in 2014. |
| Defence co-operation | <ul style="list-style-type: none"> • The first-ever Bilateral Maritime Exercise, <i>AUSINDEX</i>, was conducted in Visakhapatnam in 2015. • In 2018, <i>Indian Air Force</i> participated for the first time in the Exercise <i>Pitch Black</i> in Australia. • <i>INS Sahyadri</i> participated in <i>Kakadu</i>, the biennial Exercise of the Australian Navy. • The <i>AUSTRALIND</i> is the exercise of the Special Forces of Army Exercise. |
| Consular cooperation | <ul style="list-style-type: none"> • The Mutual Legal Assistance Treaty (MLAT) and the <i>Extradition Treaty</i> between India and Australia, were signed in 2008. |

India Australia Ties

potential for it to reach around US\$ 50 billion in 5 years.

- **People-to-people ties** – India is one of the top sources of skilled immigrants to Australia.
- **Clean energy** – The countries signed a Letter of Intent on New and Renewable Energy in 2022 to bring down the cost of renewable energy technologies, especially ultra-low-cost solar and clean hydrogen.
- **IRIS** – India announced matching funds of AUD 10 million for Pacific Island Countries under *Infrastructure for Resilient Island States (IRIS)*.
- **ISA** – It also announced AUD 10 million for Pacific Island Countries under *International Solar Alliance (ISA)*.

What is the status of cooperation in the education sector?

- **MREQ** – The Mechanism for *Mutual Recognition of Educational Qualifications (MREQ)* was signed this year.
- This will facilitate mobility of students between India and Australia.
- Indian students are the second largest cohort of foreign students in Australia.
- **New mechanism** – The *Australia-India education qualification recognition mechanism*, degrees obtained in Australia will now be recognised in India, and vice-versa.
- This move will not apply to professional qualifications such as engineering, medicine and law graduates, which will remain outside the ambit of this agreement.
- **Maitri scholarship** – It will provide financial assistance to Indian students in Australia for as long as 4 years.
- It will attract and support Indian students to study at Australian universities.

8.3 India- Italy Relations

Why in news?

On the 75th anniversary of diplomatic relations between Italy and India, the India-Italy Summit on March 2023 marked a turning point in the relations between the two countries.

What is the history of India-Italy relationship?

What are the recent developments in India-Italy relationship?

- The elevation of bilateral relations to a strategic partnership has been established for the first time in 2023.
- In recent years, Italy has joined all the multilateral initiatives promoted by India, from the [Indian Ocean Rim Association \(IORA\)](#) to the [Coalition for Disaster Relief Infrastructure \(CDRI\)](#), to the [International Solar Alliance](#).
- European-Indian strategic partnership aims to support the ongoing negotiations for Free Trade Agreements and agreements on

Political Relations

- Political relations between India and Italy were established in 1947.

Economic Relations

- Italy is among India's top 5 trading partners in the EU.
- Italy ranks 18th in FDI inflows in India and India ranks 19th as country of origin of Italian imports,.

Defence

- A biennial naval exercise between India and Italy.

Cultural Exchange

- There are around 10 Universities/higher education institutions in Italy with highly qualified faculties which conduct courses in Indian art, history and languages.

Science and Technology

- A significant bilateral initiative under the S&T Cooperation Agreement is the India-Trento Programme for Advanced Research (*ITPAR*)

Indian Community in Italy

- Indian community is the 5th largest foreign community in Italy.

India Italy Relations

investment protection and geographical indication protection.

- In scientific research and technology, the partnership between the two countries has registered the launch of 13 new joint projects.
- **Mobility:** There is a significant increase in the flow of Indian students and workers in Italy with Indian community exceeding a figure of 2,00,000, the *highest in the European Union*.

9. INTERNATIONAL ISSUES

9.1 Windsor Framework

Why in news?

The UK government reached a landmark deal with the European Union (EU) on post-Brexit trade rules related to governing the Northern Ireland.

What is the background of the issue?

- **History of Ireland** - Ireland is an island that lies to the west of the British mainland and has two separate politically independent territories.
- Northern Ireland which is about 1/6th of the total island is a part of the UK and is administered as a relatively autonomous region.
- The rest of the island forms the 'Republic of Ireland' and is an independent sovereign nation since 1922.
- A hard-fought peace was secured only in 1998 under the Belfast Agreement, also called the Good Friday agreement.
- **Relationship with the EU** - Both the Republic of Ireland and UK (thereby Northern Ireland) became members of the "European Economic Community (EEC)" in 1973.
- EEC later evolved to become the EU and also to a great extent helped to ease the tensions between the Unionists & Nationalists.
- As Britain left the EU and exited the single market and customs union, the relationship between Republican Ireland and Northern Ireland has become a challenging puzzle to solve.
- After the Brexit, Northern Ireland remained its only constituent that shared a land border with the Republic of Ireland.
- Since the EU and the UK have different product standards, border checks would be necessary before goods could move from Northern Ireland to Ireland.



Great Britain – England + Scotland + Wales
United Kingdom – Great Britain + Northern Ireland

What is the Northern Ireland Protocol?

- **Check posts** – Checks would be conducted between Great Britain and Northern Ireland.
- Under the protocol, Northern Ireland remained in the EU single market, and trade-and-customs inspections of goods coming from Great Britain took place at its ports along the Irish Sea.

What is proposed under the Windsor Framework?

- It will replace the Northern Ireland Protocol, which had proved to be among the thorniest of Brexit fall-

Time & resource wastage

- The checks made trade between Great Britain and Northern Ireland cumbersome, with food products losing out on shelf life while they waited for clearance.

Taxation

- Some taxation and spending policies of the UK government could not be implemented in Northern Ireland because of EU rules.
- The sale of medicines was caught between different British and EU rules.

United UK

- Any kind of border in the Irish Sea bothered those who want a United Kingdom.
- The Democratic Unionist Party (DUP) has not allowed Stormont, its Parliament, to function since last year, because of its opposition to the Protocol.

Issues with Northern Ireland Protocol

outs, creating problems both economic and political.

- The framework has two crucial aspects:
 - Introduction of a green lane and red lane system** - For goods that will stay in Northern Ireland and those that will go to the EU respectively.
 - The Stormont Brake** - Allows Northern Ireland lawmakers and London to veto any EU regulation they believe affects the region adversely.
- The two lane system**– British goods meant for Northern Ireland will use the green lane at the ports, and will be allowed to pass with minimal paperwork and checks.
- Physical checks will be conducted if the goods are deemed suspicious, in place of the routine checks now.



- Goods destined for Ireland or the rest of the EU will have to take the red lane, with the attendant customs and other checks.
- The Stormont Brake** – It means the democratically elected Northern Ireland Assembly can oppose new EU goods rules that would have significant and lasting effects on everyday lives in Northern Ireland.
- For this, they will need the support of 30 members from at least 2 parties and the British government can then veto the law.

What is the outcome of the framework?

- With the Windsor Framework, UK hopes to improve trade and other ties with the EU.
- The deal has allowed Sunak to do away with the Northern Ireland Protocol Bill introduced by his predecessor Boris Johnson.
- The bill involved the UK government reneging on the promise it made to the EU to follow the Protocol.

9.2 Saudi Arabia-Iran reconciliation

Why in news?

The Saudi-Iran reconciliation in a China-brokered agreement reflects the new reality that Beijing is increasingly playing a bigger role at a time when the U.S., is preoccupied with challenges elsewhere.

What is the history of the ties?

- Islamic sectarianism** – The rivalry between Saudi Arabia and Iran is rooted in Islamic sectarianism.
- While Iran is the foremost Shia state in the world, Saudi Arabia is considered to be the religious home of Sunni Islam.
- In modern times, this sectarian rivalry has translated into a tussle for regional hegemony.
- In both the wars in Yemen and Syria, Iran and Saudi Arabia find themselves on opposite sides.
- US factor** – Iran is highly critical of Saudi Arabia's closeness with the United States.



- The US has crippled Iranian economy with its sanctions regime for decades.
- **Militancy** – Saudi Arabia is worried of the large network of armed militias across West Asia that Iran funds and backs, a threat to its own sovereignty as well as the regional balance of power.
- Iran and Saudi Arabia will patch up a 7 year split by reviving a security cooperation pact, reopening embassies in each other's countries, resuming trade, investment and cultural accords.

What is the role of China in this agreement?

- China's role as peace broker is yet another sign of changing currents in the region.
- China has historically maintained ties with both countries and the latest deal points to China's growing political and economic clout in the region.

What are the concerns for the United States?

- The United States has for a long time wielded great influence in West Asia.
- It has been the predominant global power that has had influence over geopolitics in the conflict-ridden region.
- Crucially, this deal and China brokering it, does not portend well for the United States.

What is the way forward?

- The agreement is welcome in context of the human toll that the Saudi-Iran rivalry has taken.
- However, this does not mean that all problems will be immediately resolved.
- While Iran and Saudi Arabia may still fall out, for the time being, this diplomatic agreement has ushered in major change in geopolitical dynamics in West Asia.
- The agreement could be the start of a greater global geopolitical realignment.
- The announcement could not only lead to a major realignment in West Asia, it also poses a major geopolitical threat to the United States, with China acting as peace broker for the historic deal.

Saudi Perspective

• **Vision 2030** – Regional peace will be crucial to turning Saudi Arabia into the global hub that Vision 2030 envisions.

Away from US

• While the US continues to be Saudi Arabia's biggest military supplier, in recent years, the desert kingdom has courted various powers including Russia, China and now, Iran.

Iran Perspective

• **Nuclear deal** – The agreement comes as Iran accelerates its nuclear program after 2 years of failed U.S. attempts to revive a 2015 deal that aimed to stop Tehran from producing a nuclear bomb.

• **Regional allies** – Finding allies in the region is of utmost importance to Iran when the Khomeini regime is perhaps at its weakest since the revolution.

Israel – The move has ushered in a wave of anxiety in Israel which shares no formal diplomatic ties with either nation. While Israeli leaders see Iran as an enemy and an existential threat, they consider Saudi Arabia a potential partner.

Yemen – Riyadh intervened in Yemen against the Houthi movement after the Iran-aligned group ousted the internationally recognized government from power. Restored ties between Riyadh and Tehran could facilitate agreement between Saudi and the Houthis.

Syria – Iran has offered military, economic and diplomatic support to President Bashar al-Assad since his crackdown of protests in 2011 left him isolated. The Saudi-Iranian deal comes as a step towards Syria's return to the Arab League.

Lebanon – Lebanese politics have been broadly split for years between a pro-Iran alliance led by powerful armed group Hezbollah and a pro-Saudi coalition. The agreement between Tehran and Riyadh has sparked hope that paralysis could end.

Iraq – After the toppling of Saddam Hussein, Iran deepened its political, security and economic influence in Iraq, sparking Saudi alarm. Iraqis hope for a general regional detente that would allow their country to rebuild.

Impact on various stakeholders

9.3 The Feminist Foreign Policy (FPP) Movement

Why in news?

Germany has recently introduced new feminist guidelines that will guide its diplomacy and developmental goals and increasing FPP across the world.

What is FPP?

- **FPP** - There is no singular, cohesive definition of a "feminist foreign policy" for governments.
- FPP defines that women to be included in foreign diplomacy to promote international peace.

Feminist foreign policy is a concept developed by Margot, former Swedish Foreign minister

- The FPP calls for the state to promote good practices to achieve gender equality and to guarantee all women their human rights through diplomatic relationships.

What is the need for feminist foreign policy?

- To overcome the Systemic and structural subordination and marginalization of women that characterize the lives of countless women across the world.
- FPP to ensure people “have the same right to representation and access to resources”.
- FBB mandates that gender equality to be corner stone of every diplomatic engagement, reiterating that women, girls and marginalized groups must be protected from violence.
- FBB prioritizes equal treatment and equal opportunity, while being gender-responsive across policies.
- The adoption of FPP by the South Asian nations will enhance gender equality within the region and beyond.

SDG 5 - Achieve gender equality & empower all women and girls.

What is Status of FPP in India?

- Women account for only 16% of the Indian Foreign Service and only 18% of top leadership positions in embassies around the world.
- Indian foreign policy lacks gender-inclusive and need to adopt a feminist foreign policy (FFP) framework.
- An all-woman police force from India was deployed under the aegis of the United Nations (UN) in Liberia back in 2007.
- Global Gender Gap Index 2022 – India ranks 135.

United Nations Security Council Resolutions (UNSCR) 1325 focus on raising the status of women and mainstreaming gender.

What is the status of FPP across the world?

- There are currently three countries whose foreign policies are explicitly feminist: Sweden, Canada and France as of march 2019.
- Sweden, Canada, The Netherlands, and Mexico are countries which have adopted FPP framework.

What are the criticism of FPP?

- Sweden, for instance, faced criticism for its binary focus on women, and not people of all genders
- The countries (Canada, Sweden and Germany) having FPP also carry arms trade in other hand which is against FPP.
- The investments made to promote FPP only benefit the private firms and doesn't yield the intended aims and goals.
- Lack of funds for FPP
- Ambiguity in the definition of FPP.
- Lack of consensus in the international forums about FPP.

9.4 Arrest Warrant against Vladimir Putin

Why in news?

International Criminal Court (ICC) has issued an arrest warrant against Russian president Vladimir Putin.

What is the ICC?

- ICC investigates and, where warranted, tries individuals charged with the gravest crimes of concern to the international community.
- The four types of gravest crimes are
 1. Genocide
 2. War crimes
 3. Crimes against humanity
 4. The crime of aggression.
- ICC was established in 1998 under the **“Rome Statute”**.
- Headquarters - The Hague, Netherlands
- 123 countries are members of ICC, including Britain, Japan, Afghanistan, and Germany.

- **India, USA, China, Russia and Ukraine** are **not the member of ICC**.
- Jurisdiction of ICC is limited to offences occurring after it came into effect on July 1, 2002.

What are the charges against Vladimir Putin?

- Unlawful deportation of population
- Unlawful transfer of population from occupied areas of Ukraine to the Russian Federation.
- Failure to exercise control properly over civilian & military subordinates under his effective authority, committing or allowing the commission of such acts.
- Individual criminal responsibility for the abduction and deportation of Ukrainian children
- The Independent International Commission of Inquiry Report on Ukraine outlined the body of evidence against Russian authorities which include –
 - Wide range of violations of international human rights law and International humanitarian law in many regions of Ukraine and the Russian Federation.
 - Willful killings, attacks on civilians, unlawful confinement, torture, rape, and forced transfers and deportations of children.
 - This is the first time that the ICC has issued an arrest warrant against one of the five permanent members of the UN Security Council.

What are the Powers of ICC against Putin?

- If Putin travels to a state party to the ICC, then that country must arrest him according to its obligations under international law.
- Ukraine is not a State Party to the Rome Statute, but it has twice exercised its options to accept ICC's jurisdiction over alleged crimes under the Rome Statute
- If the acceptance of a state that is not a party to the statute is required, the state may accept the jurisdiction of the court for a crime concerned, by making a declaration to the Registrar and cooperating without any delay or exception.

Difference between ICC & ICJ

Features	ICC	ICJ
Subject Matter	Trial criminal offenses i.e. genocide, crimes against humanity, war crimes, crimes of aggression	Settle the legal dispute i.e. sovereignty, boundary disputes, maritime disputes, trade, natural resource
Members	Individuals either ratified member of ICC or accept the jurisdiction of ICC	Only states either member of United Nation or ICJ or both.
Jurisdiction	Criminal prosecution of individuals	• Contentious Jurisdiction • Advisory opinion
Authorized Statute	Follow Rome Statute	Follow ICJ Statute
Composition	Composed of 18 judges elected to nine year terms and not re-elected for further terms	Composed of 15 judges elected to nine year terms and may be re-elected for up to two further terms
Appeal	Appeal is instituted by appeal chamber	No appeal provision for ICJ
Independence	Independent organization	United Nation Judiciary organ

9.5 United Nations 2023 Water Conference

Why in news?

Over 700 commitments were made at the recently conducted United Nations 2023 Water Conference in New York City to make the world water-secure.

Water Day is celebrated on 22 March 2023, and this year the theme is "Accelerating change"

What is UN 2023 Water Conference about?

- The UN 2023 Water Conference is formally known as the 2023 Conference for the Midterm Comprehensive Review of Implementation of the UN Decade for Action on Water and Sanitation (2018-2028).

- Aim** - “Our watershed moment: uniting the world for water”, aims to support the achievement of internationally agreed water-related goals and targets, including those contained in the 2030 Agenda for Sustainable Development.

- It took place at UN Headquarters in **New York**.

- It was co-hosted by **Tajikistan and the Netherlands**.

- It took 46 long years for the UN to organize this Water Conference in 2023, the first being held in 1977 in **Mar de Plata, Argentina**.

Water Action Agenda

- The **700 voluntary commitments** will form the Water Action Agenda.

Climate resilient water and sanitation infrastructure

- USA announced a commitment of up to \$49 billion in investments to support climate resilient water and sanitation infrastructure and services

Quality Infrastructure

- Japan announced that it will contribute 500 billion yen to the solution of **water-related social issues** faced by the Asia-Pacific region by developing quality Infrastructure

River basins management and clean running water

- Vietnam pledged to **develop policies** for major river basins management by 2025 and clean running water by 2030

Africa's water investments gap

- The African Union Commission and Continental Africa Investment Programme (AIP) aims to close Africa's water investments gap by mobilizing at least \$30 billion per year by 2030.

European Union (EU)

- The EU aims to support 70 million individuals to an **improved drinking water source and sanitation** facility by 2030.

Water Convention and transboundary cooperation

- Switzerland submitted 5 commitments in the areas of Water Convention and transboundary cooperation.

Major Initiatives taken during the conference

What are the challenges?

- The commitments are non-binding in nature.
- The water action agenda should include diverse experiences and did not include the necessary communities of water management.

- The conference failed to address the violence and threats faced by communities trying to protect dwindling water sources.

9.6 Decreasing Diplomatic Alliance for Taiwan

Why in news?

Recently Honduras established formal relations with China soon after ending its ties with Taiwan is connected to the “One China” Policy.

Honduras

- Honduras is a Central American country with Caribbean Sea coastlines to the north and the Pacific Ocean to the south.

Evolution of China-Taiwan relationship

- The Taiwan is located in the East China Sea to the northeast of Hong Kong, north of the Philippines and south of South Korea, and southwest of Japan.
- Taiwan earlier known as Formosa a tiny island off the east coast of China.
- Taiwan observes October 10 “double 10” as its national day and the Republic of China was declared on December 29 1911.
- The civil war in 1949 that ended in victory for the communists and retreat of Chiang and the KMT to Taiwan - and it has since continued as the Republic of China (Taiwan).
- Since its founding of Taiwan in 1949 the People Republic of China (PRC) (China) has believed that Taiwan must be reunified with the mainland while the RoC (Taiwan) has held out as an “independent” country.
- In 1954-55 and in 1958 the PRC bombed the Jinmen, Mazu, and Dachen islands under Taiwan's control.
- The RoC became the non-communist frontier against China during the Cold War.

The United Nations General Assembly Resolution 2758 was passed in response to the United Nations General Assembly Resolution 1668 that required any change in China's representation in the UN be determined by a two-thirds vote referring to Article 18 of the UN Charter

Currently only 13 countries (plus the Vatican) recognize Taiwan as a sovereign country.

- In 1975 Taiwan got its first democratic reforms.
- The most serious encounter was in 1995-96, when China began testing missiles in the seas around Taiwan.
- Starting from the 1990s and despite the missile crisis relations between the PRC and RoC improved and trade ties were established
- As the British prepared to exit Hong Kong in 1999, the “One China, Two Systems” solution was offered to Taiwan as well, but it was rejected by the Taiwanese.
- In 2000 Taiwan got its first non-KMT government when the Taiwanese nationalist Democratic Progressive Party (DPP) won the presidency.
- In 2004 China started drafting an anti-secession law aimed at Taiwan trade and connectivity.
- Today the two big players in Taiwan’s politics are the DPP and KMT broadly the parties of the island’s Hakka inhabitants and the minority mainland Chinese respectively.
- The 2016 election of President Tsai marked the onset of a sharp pro-independence phase in Taiwan and the current tensions with China coincided with her re-election in 2020.
- Taiwan now has massive economic interests, including investments in China and pro-independence sections worry that this might come in the way of their goals.



What is the One China Policy?

- **For china** - ‘One China’ for China basically refers to the principle that it is one country composing mainland China and the island of Taiwan.
- **For USA** - The One China Policy contains elements such as
 - The US interest in a peaceful process of cross-strait dispute resolution
 - Its different interpretation of Taiwan’s legal status as compared to Beijing’s interpretation
- The One China Policy of the United States is not the same as the “One China” Policy of china
- In the 1980s the US shifted to using “policy” in place of “principle” to differentiate between the US approach and China’s version
- US opposes China and Taiwan unilaterally changing the status quo.

The two-state solution refers to an arrangement where Israeli and Palestinian states co-exist in the region. “One country, two systems” principle is used by China to govern the special administrative regions of Hong Kong and Macau.

What are the views of china and Taiwan?

China	Taiwan
• In Beijing’s view, the ruling Democratic Progressive Party in Taipei with the support of Washington bears responsibility for the tensions by pursuing de facto independence. • China has never recognized the existence of Taiwan as an independent political entity, arguing that it was always a Chinese province • In 1971 that the China made <u>UN through Resolution 2758</u> which unseated Taiwan as the official representative of China	• In Taiwan’s view Beijing has exerted growing diplomatic pressure and military muscle to isolate Taiwan • Taiwan was not a part of that state or of the People’s Republic of China that was established after the communist revolution • Taiwan says that the modern Chinese state was only formed after the revolution of 1911 and it • Taiwan at present has its own elections and defence forces

G.S PAPER III

10. ECONOMY

10.1 Social Stock Exchange (SSE)

Why in news?

The National Stock Exchange of India received the final approval from the markets regulator Securities and Exchange Board of India (SEBI) to set up a Social Stock Exchange (SSE).

What is a Social Stock Exchange?

- The SSE would function as a separate segment within the existing stock exchange and help social enterprises raise funds from the public through its mechanism.
- It would serve as a medium for enterprises to seek finance for their social initiatives, acquire visibility and provide increased transparency about fund mobilisation and utilisation.
- Retail investors can only invest in securities offered by for-profit social enterprises (FPSEs) under the Main Board.
- In all other cases, only institutional investors and non-institutional investors can invest in securities issued by SEs.

Social Intent	Dependent on Corporates
• Any non-profit organisation (NPO) or FPSEs that establishes the primacy of social intent would be recognised as a social enterprise. • Those recognised will make it eligible to be registered on the SSE.	• NPOs that are dependent on corporates for more than 50% of its funding are considered ineligible.

Eligibility

How do NPOs raise money?

- **Zero Coupon Zero Principal (ZCZP)** – NPOs can raise money either through issuance of ZCZP instruments from private placement or public issue, or donations from mutual funds.
- ZCZP bonds differ from conventional bonds in the sense that it entails zero coupon and no principal payment at maturity.
- The minimum issue size is presently prescribed as Rs 1 crore and minimum application size for subscription at Rs 2 lakhs for ZCZP issuance.
- The NPO may choose to register on the SSE and not raise funds through it but via other means, however, they would have to make necessary disclosures about the same.

What about on completion of projects?

- **Development Impact Bonds** – It is another structured finance product available for NPOs.
- Upon the completion of a project and having delivered on pre-agreed social metrics at pre-agreed costs/rates, a grant is made to the NPO.
- The donor who makes the grant upon achieving the social metrics would be referred to as **Outcome Funders**.
- Since the payment above is on post facto basis, the NPOs would have to also raise money to finance their operations.
- This is done by a **Risk Funder** who alongside enabling the financing of operations on a pre-payment basis, also bears the associated risk with non-delivery of social metrics.

How do FPOs raise money?

- For-Profit Enterprises (FPEs) need not register with social stock exchanges before it raises funds through SSE.
- However, it must comply with all provisions of the ICDR Regulations when raising through the SSE.
- It can raise money through issue of **equity shares** to an **Alternative Investment Fund** including Social Impact Fund or issue of debt instruments.

What disclosures need to be made?

- **Annual impact report** – SEBI's regulations state that a social enterprise should submit an annual impact report in a prescribed format.
- The report must be audited by a social audit firm and has to be submitted within 90 days from the end of the financial year.
- **Money raised** – Listed NPOs, on a quarterly basis, are specifically required to furnish details about the money they have raised category-wise.

10.2 India and SDG Goals

Why in news?

According to Lancet study, India is like to miss deadline for 50% of SDG indicators.

What are Sustainable Development Goals?

- The SDGs were adopted by the United Nations in 2015 with a vision to achieve a better and more sustainable future for all.
- The SDGs, officially known as 'Transforming our world: the 2030 Agenda for Sustainable Development' is a set of 17 Global Goals with 169 targets between them.
- They are a new, universal set of goals, targets and indicators that UN member states will be expected to use to frame their agendas and political policies over the next 15 years.
- The SDGs follow, and expand on, the Millennium Development Goals (MDGs), which were agreed by governments in 2000, and ended on 2015.
- Enormous progress has been made on the MDGs, showing the value of a unifying agenda underpinned by goals and targets.
- Despite this success, the indignity of poverty has not been ended for all.
- The new Global Goals, and the broader sustainability agenda, go much further than the MDGs, addressing the root causes of poverty and the universal need for development that works for all people.
- India is one of the signatory countries that has committed to achieving these goals by 2030.

India will not be able to meet the targets on anaemia.

How India has performed so far?

- | | | |
|--|----------------------|--|
| <ul style="list-style-type: none"> • India achieved the goal of one SDG indicator relating to <u>adolescent pregnancy in the age group of 10-14 years</u>. | India lacking | <ul style="list-style-type: none"> • India is trailing behind in achieving more than 50% of indicators under the United Nations Sustainable Development Goals (SDGs) seven years before the 2030 deadline. |
| <ul style="list-style-type: none"> • The results point to an urgent <u>need to increase the momentum on 4 SDG goals</u>, No Poverty, Zero Hunger, Good Health and Well-Being and Gender Equality. | SDG Indicators | <ul style="list-style-type: none"> • 75% of Indian districts are off target for 8 indicators: Poverty; Anaemia; Child marriage domestic violence; Stunting and wasting of children; Access to essential services; Modern contraceptive use; and Tobacco consumption. |
| <ul style="list-style-type: none"> • India faring well – These SDG indicators include bank accounts for women, birth registration, internet use, electricity access, vaccination, birth registration, and lowering of child marriage. | Off-target Districts | <ul style="list-style-type: none"> • They are concentrated in Madhya Pradesh, Chhattisgarh, Jharkhand, Bihar and Odisha. |
| <ul style="list-style-type: none"> • India has registered a significant decline in maternal mortality rates. • Meeting the targets – India may meet the target of improved <u>water access, clean fuel for cooking, lowering teenage pregnancy age, and partner sexual violence</u>. | SDG Index | <ul style="list-style-type: none"> • India slipped 3 ranks from 117 to 120 on the SDG Index, according to the State of Environment report released by the Centre for Science and Environment. • This ranking placed India behind all South Asian nations except for Pakistan. |

Challenges

10.3 Hindu Rate of Growth

Why in news?

India's gross domestic product (GDP) data for the third quarter received a word of caution from the former Reserve Bank of India (RBI) governor Raghuram Rajan.

What is the issue?

- India's GDP for Q3 slowed to 4.4%, and for Q1, it grew by 13.2%, this slowdown in growth was termed as worrying by Raghuram Rajan.
- A report by the State Bank of India (SBI), dismissed arguments that India is dangerously close to Hindu rate of growth.

Gross domestic product (GDP) is the monetary value of all the finished goods and services produced within a country's borders in a specific time period.

What is meant by Hindu rate of growth?

- It was coined by late economist Raj Krishna in 1978.
- It describes the slow growth in the country, which basically refers to the low pace of economic growth rates during 1950s to 1980s.
- During this period, the Indian economy averaged 3.5%.
- Only if the rate of growth is persistently slow and accompanied by low per-capita GDP, then it will be known as Hindu rate of growth but it has to factor in population growth as well.

When did India outgrow the Hindu rate of growth?

- The GDP growth rate data suggests that India started growing faster than the Hindu rate of 3.5% long before the crisis and reforms of 1991.
- India's average annual GDP growth rate between 1956 and 1975 was 3.4% almost exactly the Hindu rate of growth.
- However, between 1981 and 1991 that is, a full decade before the crisis and reforms, India's growth averaged 5.8%.

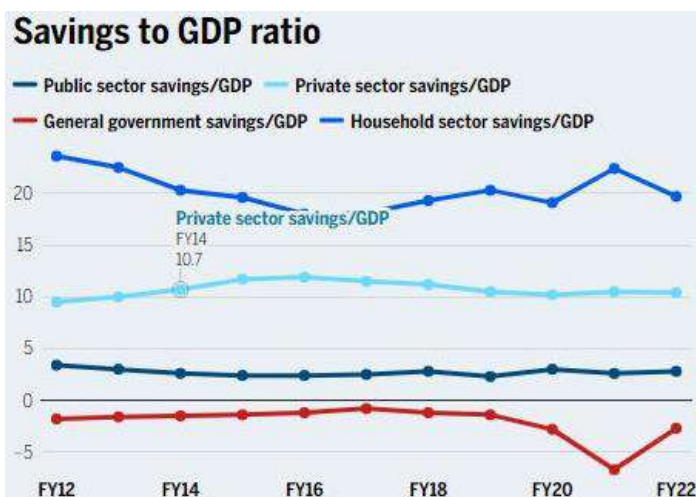
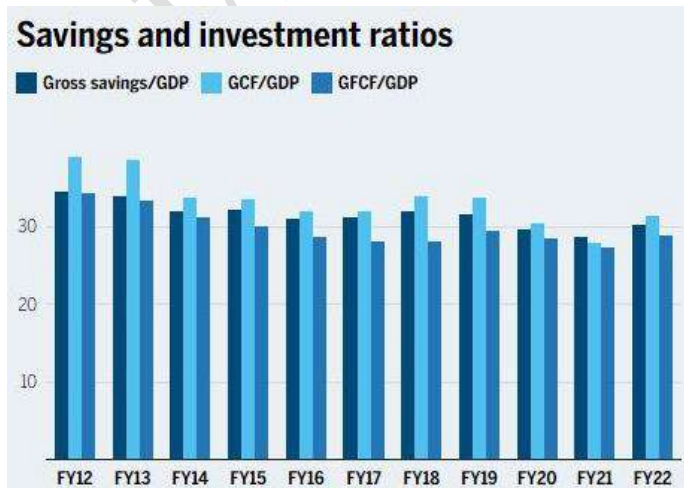
Before economic reforms of 1991, India's economic growth remained stagnant and low, while per capita income averaged around 1.3%.

How India's GDP has been growing?

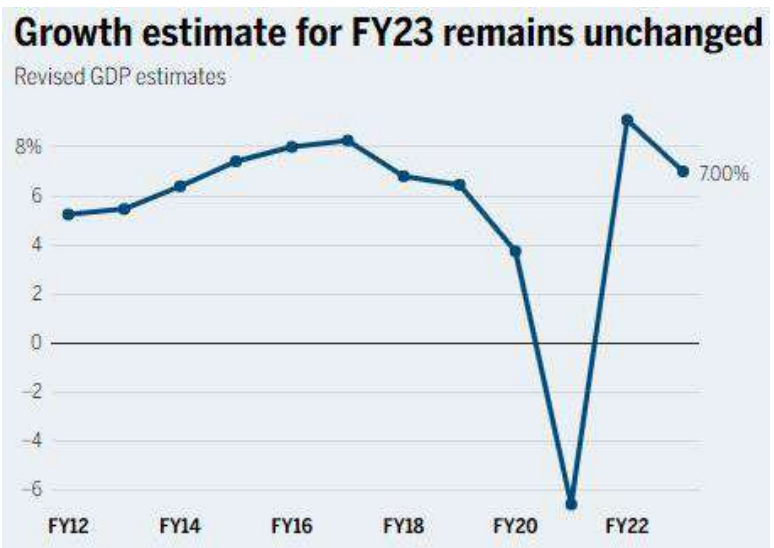
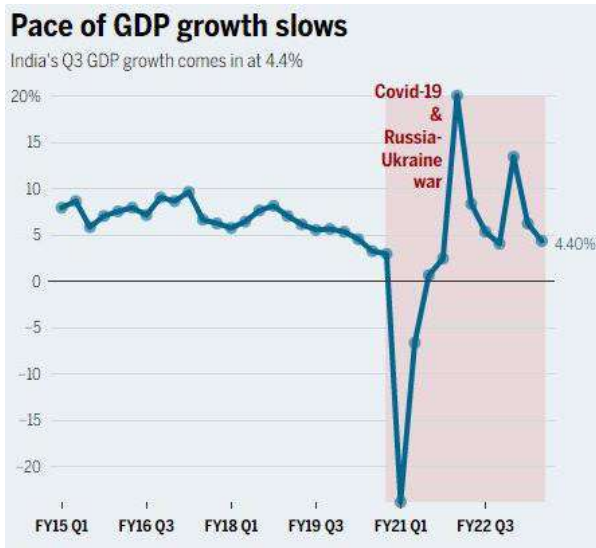
- GDP** – It shrunk by unprecedented 23.8% in the first quarter of the financial year 2020-2021, due to the pandemic.
- As lockdowns started to ease and business activities resumed, India's GDP also started rising.
- Russia-Ukraine** – FY22-23 brought fresh economic challenges in the form of war, impacting almost all major economies of the world, slowing the pace of growth, pushing inflation to record highs.

What SBI report said on savings and investment?

- Quarterly growth numbers are noisy and should be best avoided for any serious interpretation.
- Gross capital formation (GCF)** – The GCF of the government touched a high of 11.8% in 2021-22, up from 10.7% in 2020-21.
- Private sector investment** – This also had domino effect on private sector investment that jumped from 10% to 10.8% over the same period.
- Gross savings** – In 2021-22, gross savings have risen to 30% from 29% in 2020-2021.
- Household savings** – It increased sharply during the pandemic on account of sharp accretion in financial savings such as deposits.
- Incremental Capital Output Ratio (ICOR)** – It measures additional units of capital investment needed to produce additional units of output.



- Reducing ICOR in the current years reflects a relatively increasing efficiency of capital and shows that the economy is on a sound footing.
- From that point of view, future GDP growth rates even at 7% could still mean a decent number by any standards.



What is the way forward?

- The country is making rapid progress in all fields and willing to compete with the best in almost all spheres.
- In a world where each country is taking care of its own, India too has learnt to do the same.
- As things stand today, India is still far from the 3.5% level that is associated with the Hindu rate of growth.
- However, it is noteworthy that India had been decelerating in the 3 years leading up to the pandemic and grew by just 3.9% in the year just before Covid.

10.4 India's logistics system

Why in news?

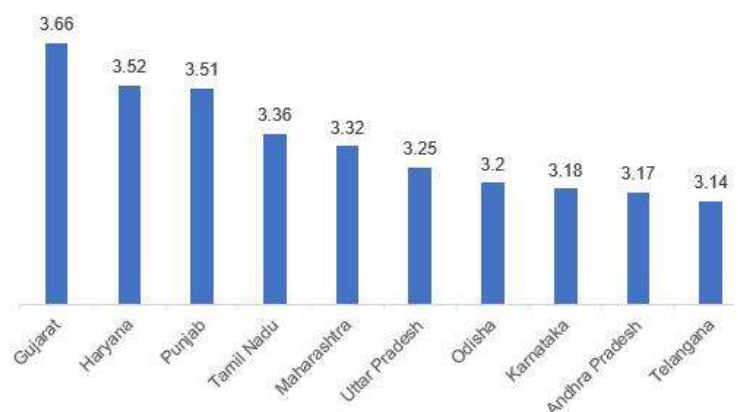
India's logistics and connectivity infrastructure struggles to keep pace with the country's needs, creating a drag on competitiveness and growth prospects.

Why is logistics sector important?

- It is a *differentiating sector* that can largely affect any country's exports, thereby adding a significant competitive edge, with the underlying assumption of a robust logistics sector.
- The logistics industry comprises *all supply chain activities*, mainly transportation, inventory management, flow of information and customer service.
- It determines the success of not only the country's supply chain but also influences it on a global scale.

What is the status of India's logistics sector?

- India's logistics are estimated to account for about 14.4% of GDP and more than 22 million people rely on it for their income.
- The Department of Commerce's logistics division for India is given the responsibility for the *Integrated Development of Logistics Sector*.
- The *Special Secretary to the Government of India* is responsible for the development of an action plan to facilitate the overall development of the logistics sector.
- State-wise rankings of logistics sector in India:



To know more about [India's logistics sector](#).

What is government's role towards the development of the logistics sector?

- **National Logistics Policy** – The objective of the [policy](#) is to boost the nation's economy and corporate competitiveness by establishing an integrated, sustainable and cost-efficient logistics network.
- The policy aims to reduce the logistics cost, which stands at 14% of GDP to 9-10%.
- **National Logistics Law** – The law's provisions will make it possible to assign a distinct logistics account number in place of cumbersome registration processes.
- **Logistics Master Plan** – An Inter-Ministerial Committee will be used to supervise the master plan's execution.
- State wise local logistics strategies will be created in coordination and cooperation with the federal plans.
- **National Multimodal Facilities and Warehousing** – The standards for the *National Logistics Platform (iLOG)* are currently being finalised in conjunction with the Ministry of Electronics and Information Technology (MeiTY).
- The iLOG will work to integrate a single platform for the various IT solutions that have been developed by various stakeholders, including logistics service providers.
- **National Logistics Workforce Strategy** – The approaches include introduction of a Certified Logistics Professional (CLP) scheme, and to incentivise the engagement of such professionals.
- The *Driver Employment and Empowerment Programme* is one of the strategies, and it aims to lower logistics costs by making truck driving a desired career due to the severe scarcity of truck drivers.
- **PM Gati Shakti National Master Plan** – The Union Budget 2023 doubled the funding of the [plan](#) and has announced an outlay of ₹2.4 lakh crore for the Indian Railways.
- Railways offer an economic mode of logistics movement given their pan-India network, which can play an important role in enabling a coordinated and integrated logistics system.

Non Bulk cargo is commodity cargo that is transported unpackaged in large quantities.

What is the way forward?

- By focusing on the digital aspect, the government's aim is to upgrade the existing system will lead to faster, better communication with fewer errors and will benefit the sector significantly.

Convenience over cost	Freight movement cost is the highest in the road sector, nearly twice the rail cost. However, the convenience of road transport has taken precedence over cost, and the railways in India have been losing freight share to other more flexible modes.
Rise in container traffic	The convenience of moving non-bulk commodities has led to an increase in containerised traffic over the last decade. It has grown from 7.6 million Twenty-foot Equivalent Units (TEU) [TEU is a unit of cargo capacity] in 2008 to 16.2 million TEUs in 2020.
China	China uses special trains to carry containers that connect significant ports to the inland, and has dedicated rail lines to move container traffic and planned double-decker container carriages for greater efficiency.
- An integrated logistics infrastructure with first and last-mile connectivity is essential to make rail movement competitive with roads.
- Such a move will facilitate exports by rail to neighbouring countries such as Nepal and Bangladesh.
- Increased adoption of the railways for cargo movement is crucial to improve the country's logistics competitiveness.

Importance of Railways

10.5 Crypto markets under PMLA

Why in news?

The Finance Ministry's move to bring in virtual digital assets under the money laundering law is aimed at widening the taxation and regulatory net and giving teeth to agencies.

What is Prevention of Money Laundering Act (PMLA)?

- The Act enacted in 2022 enables government authorities to confiscate property earned from illegal sources and through money laundering.
- Under the Act, the *burden of proof lies with the accused*.

The burden of proof is a legal standard in which the accused has to prove that the property has not been obtained through proceeds of crime.

Objectives

- Preventing money laundering.
- Combating the channelizing of money into illegal activities and economic crimes.
- Providing for the confiscation of property derived from or involved in money laundering.
- Providing for any other matters connected with or incidental to the act of money laundering.

Satoshi Nakamoto conceptualised an accounting system in 2008 financial crisis which has mooted the idea of blockchain.

Offences

- **Part A** – It includes offences under various acts.
- Indian Penal Code, Prevention of Corruption Act, Narcotics Drugs and Psychotropic Substances Act, Antiquities and Art Treasures Act, Trademark Act, Wildlife Protection Act, Copyright Act and Information Technology Act.
- **Part B** – It includes offences that are mentioned in Part A, but are of a value of Rs. 1 crore or more.
- **Part C** – It includes *trans-border crimes*.

Penalties

- **Freezing assets** – Freezing or seizing of property and records, and/or attachment of property obtained through crime proceeds.
- **Punishment** – Imprisonment for a minimum of 3 years and a maximum of 7 years.
- **Drugs** – If the crime of money laundering is involved with the *Narcotic Drugs and Psychotropic Substances Act, 1985*, the punishment can go up to 10 years, along with fine.

Authorities

- **Enforcement Directorate (ED)** – It is responsible for investigating offences under the PMLA.
- **Financial Intelligence Unit-India (FIU-IND)** – It is the national agency that receives, processes, analyses and disseminates information related to suspect financial transactions.

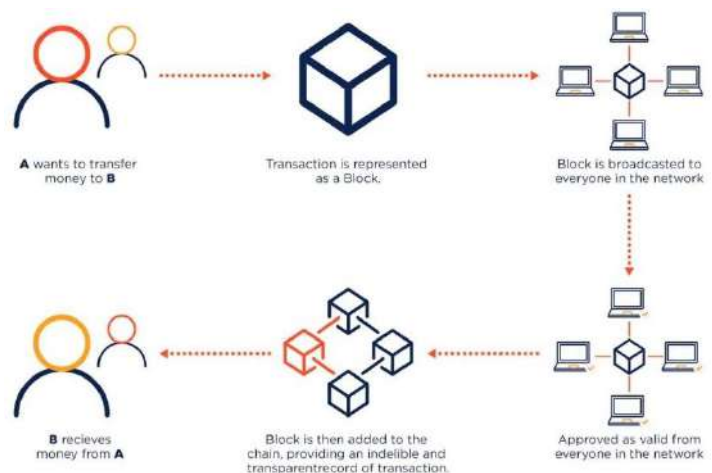
What is a cryptocurrency?

- A cryptocurrency is a medium of exchange in digital format and uses encryption techniques to both control the creation of monetary units and to verify the exchange of money.
- With cryptocurrencies, a chain of private computers is constantly working towards authenticating the transactions by solving complex cryptographic puzzles.

Bitcoin is the largest in the world according to market capitalisation, followed by Ethereum.

What exactly did the ministry do?

- **PMLA** – The government issued a notification bringing transactions involving crypto assets under the PMLA.
- It laid out the nature of transactions to be covered under PMLA.
- These are as follows:
 1. Exchange between virtual digital assets and fiat currencies.
 2. Exchange between one or more forms of virtual digital assets.
 3. Transfer of virtual digital assets.
 4. Safekeeping of virtual digital assets.
 5. Provision of financial services related to an issuer's offer.
 6. Sale of a virtual digital asset.



What is the legal status of crypto in India?

- Even though the government brought in a tax for cryptocurrencies, it did not proceed with framing regulations.

- **Ban** – The Reserve Bank of India had proposed a ban on cryptocurrencies, this was set aside by a court order.
- **Taxation** – In 2022, India introduced a 30% income tax on gains made from cryptocurrencies and the rules regarding 1% tax deducted at source on cryptocurrency came into effect.

What is the way forward?

- **VDAs** – With this move Virtual Digital Asset (VDA) entities are covered as a reporting entity.
- **PMLA laws** – This means exchanges, custodians, administrators of VDAs handling customer funds will have to take care of PMLA laws as much as banks do and report suspicious transactions.
- However, in the absence of regulators, enforcement agencies could directly take recourse of this amendment.

Time crunch

• There are concerns that the notification does not offer entities time to adhere to the fresh norms.

No central regulator

• The industry is also concerned that in the absence of a central regulator, crypto entities could end up dealing directly with enforcement agencies like the ED.

Due diligence

• Entities such as CoinDCX are now required by law to conduct due diligence and enhanced due diligence under the PMLA.

10.6 Credit Suisse Crisis

Why in news?

Recently UBS bank agreed to buy Credit Suisse bank that involved in fraud and forgery and collapsed eventually.

What is Credit Suisse?

- Credit Suisse is a famous investment bank headquartered in Switzerland.
- It's been around since 1856.
- Swiss central bank has designated it one of the country's global systemically important banks (G-Sib).
- Credit Suisse is the 12th largest foreign bank in India and it owns assets worth Rs 20,000 crore.

Global systemically important banks (G-Sib) is a bank whose systemic risk profile is deemed to be of such importance that the bank's failure would trigger a wider financial crisis and threaten the global economy.

What led to the Credit Suisse crisis?

Causes

- **Fallen share price** -Since the beginning of 2022, Credit Suisse's share price has fallen close to 60%
- **Credit default swaps (CDS)** -The spreads on credit default swaps (CDS) on Credit Suisse debt have spiked to a 14-year high — the highest since the global financial crisis of 2008.
- **Risky bets** -Credit Suisse has made several risky bets and ended up losing a lot of investor money.
- **Fading investor's confidence** –the falling share price eroded investor confidence, and has made raising fresh capital costlier.

Issues

- The biggest loser in the crisis are AT1 bond holders.

What is Additional Tier 1 (AT1) bonds?

- AT1 bonds are also known as "contingent convertibles," or "CoCos".
- They are a type of unsecured, perpetual bonds that banks issue to improve their core capital base.
- It was introduced in the aftermath of the 2008 global financial crisis.
- AT1 are a risky bet — if a lender gets into trouble, AT1 bonds can be quickly converted into equity or written down completely.
- They have higher risk and AT1s offer a higher yield than most other bonds.

Credit Default Swaps (CDS) is an insurance instrument. If an investor who has lent money to a firm (say Credit Suisse) is unsure about the firm's ability to repay, the investor can buy a CDS on Credit Suisse's bond.

- They are long-term and do not carry any maturity date.
- AT1 bonds are mandatory under Basel III norms.

What are the impacts on India?

- The crisis may have some impact on the Indian information Technology Industry, markets and startups.
- The startups receiving funds from Silicon valley bank may face funding issues.
- India has implemented Basel-III norms for the banking system.
- Under this system, banks have to maintain liquidity coverage ratio, which was actually missing from the SVB case and to some extends even in the case of Credit Suisse
- AT1 may contribute to a higher cost of capital for banks, including Indian lenders

Credit Suisse is not being seen as a direct threat in India as it owns just 0.1% of assets in the Indian banking system.

What are the differences between European and US crisis?

European crisis	US crisis
• European crisis is credit Suisse crisis • Triggering factor -Credit Suisse was partly a victim of bond market losses, but multiple other factors were at play in its downfall • A poor governance record and chequered investment decision-making, which saw the bank lurching from scandal to scandal over much of the last decade.	• US crisis include Silicon Valley Bank (SVB) and Signature Bank crisis • Triggering factor -Over 90% of deposits at Silicon Valley Bank (SVB) and Signature Bank were uninsured, and thereby prone to bank runs. • These banks were also invested heavily in long-term government bonds — and when interest rates rose, the value of their bond portfolios declined

What are the measures taken to resolve the crisis?

- The Swiss government and regulators in a bid to contain the global financial market panic brokered the deal between UBS and credit Suisse.

10.7 Regulation of Indian Clearing Corporations

Why in news?

Recently European Securities and Market Authority (ESMA) de-recognized six Indian Clearing Corporations due to “no co-operation arrangements” between Indian regulators and ESMA.

What are Clearing Corporations?

- **Securities contract (regulation) (Stock exchange and clearing corporation) regulations, 2018]** - Section 2(d) of the regulation, 2018 *defines* clearing corporation as
 - Entity that is established to undertake the activity of *clearing and settlement of trades in securities* or other instruments or products that are dealt with or traded on a recognized stock exchange and includes a clearinghouse.
- **Market Infrastructure Institutions (MIIs)** - Stock exchanges, depositories and clearing corporations are collectively referred to as Market Infrastructure Institutions (MIIs).

Role of Clearing Corporations

- **Clearing** - Clearing is a process when the organization acts as intermediary and it also assumes the role of the buyer and seller in order to ease the transactions that occur in the trade.
- It also includes all the activities that occur from the moment when the trade starts to till the final stage when the trade is settled.
- **Settlement** - The moment clearing comes to an end, settlement begins.
- The settlement agency receives securities from the seller who wants to sell his securities and receives cash from buyers who want to buy securities and settles among them.

According to the Bimal Jalan Committee (2010), these institutions are systemically important for the country's financial development and serve as the infrastructure necessary for the securities market.

- **Clearing corporations under SEBI**
 - Indian Clearing Corporation
 - Metropolitan Clearing Corporation of India Limited
 - Multi Commodity Exchange Clearing Corporation Limited
 - National Commodity Clearing Corporation Limited
 - National Securities Clearing Corporation Limited
- **Clearing corporation under RBI**
 - The Clearing Corporation of India
- **Clearing corporation under International Financial Services Centres Authority (IFSCA)**
 - India International Clearing Corporation
 - NSE IFSC Clearing Corporation



What is ESMA?

- European Securities and Market Authority (ESMA) is the *European Union's financial markets regulator and supervisor*.
- ESMA protects the investor and promote stable, orderly financial markets.
- The members include National authorities responsible for securities markets in each EU country.

What is the issue?

- **Issue** - The whole issue started in 2013 when ESMA de-recognized six Indian clearing corporations (CCs) on the basis that these entities were not registered in the EU.
- There is no co-operation between ESMA and the Indian regulators on the issue.
- ESMA has stated that European banks will continue to conduct business with Indian Clearing Corporations after April 2023 but there will be a penal capital charge on these transactions.
- **Government's stand** – ESMA's threat is unreasonable since all clearing corporations are well-regulated in India.
- *SEBI is a member of IOSCO* (International regulators body) and signatory to several multilateral agreements.
- Indian markets have [T+1](#) and net basis settlement for nearly two decades.
- Clearing corporations in India are separate legal entities with robust settlement guarantee funds, comparatively better than some in the EU.
- **Impacts** - Registering with ESMA will give the right and power to deeply supervise them.
- Giving ESMA to audit them will *expose the country's financial markets Data*.
- The impact of penal charge could be that European banks reconsider acting as custodians in India.

10.8 Safety of Indian Banks

Why in news?

The failure of Silicon Valley Bank and Signature Bank in the US raises questions on the safety of depositors' wealth in India.

What is the background of the issue?

- **Safe haven** – India remained a safe haven during the global financial crisis triggered by the collapse of investment bank Lehman Brothers in 2008.
- **Sound domestic banks** – This is because of the domestic banks, backed by sound regulatory practices, showing strength and resilience.
- **Unaffected** – Indian banks remained unaffected by the failure of Silicon Valley Bank (SVB) and Signature Bank, despite the global interconnectedness in the financial sector.

The Basel III accord introduced a regulation that requires commercial banks to maintain a minimum capital ratio of 8%, 6% of which must be Common Equity Tier 1.

Which banks are classified as D-SIBs?

- **D-SIBs** – RBI has classified SBI, ICICI Bank, and HDFC Bank as Domestic Systemically Important Banks (D-SIBs).
- It means that these banks have to earmark additional capital and provisions to safeguard their operations.
- **CET1** – The additional Common Equity Tier 1 (CET1) requirement for D-SIBs was phased-in from 2016, and became fully effective from 2019.

Balance sheet

- A reason why an SVB-like failure is unlikely in India is that domestic banks have a different balance sheet structure.

No large withdrawals

- In India we don't have a system where deposits are withdrawn in such bulk quantities.

Household savings

- It constitute a major part of bank deposits in India, this is different from the US, where a large portion of bank deposits are from corporates.

Public sector banks

- A large chunk of Indian deposits is with public sector banks, and the rest is with very strong private sector lenders.

Importance to depositor's money

- In India, the approach of the regulator has generally been that depositors' money should be protected at any cost.
- The best example is the rescue of Yes Bank where a lot of liquidity support was provided.

Positives of Indian Banks

- **Capital conservation buffer** – The additional CET1 requirement was in addition to the capital conservation buffer.
- **G-SIBs** – There are 30 G-SIBs currently, including JP Morgan, Citibank, HSBC, Bank of America, Bank of China, Barclays, BNP Paribas, Deutsche Bank, and Goldman Sachs.
- No Indian bank is on the list.

How does RBI select D-SIBs?

- The RBI follows a 2 step process to assess the systemic importance of banks.

Sample set

- **Size of GDP** – Banks are selected for computation of systemic importance based on an analysis of their size as a percentage of GDP.
- Banks having a size beyond 2% of GDP will be selected in the sample.
- **D-SIBs** – Banks that have a systemic importance above a certain threshold are designated as D-SIBs.

The Basel, Switzerland-based Financial Stability Board (FSB), an initiative of G20 nations, has identified, in consultation with the Basel Committee on Banking Supervision (BCBS) and Swiss national authorities, a list of global systemically important banks (G-SIBs).

Segregation

- **Buckets** – D-SIBs are segregated into buckets based on their systemic importance scores.
- **Capital Charge** – A D-SIB in the lower bucket will attract a lower capital charge, and a D-SIB in the higher bucket will attract a higher capital charge.

Why was it felt important to create SIBs?

- **SIFIs** – FSB said all member countries should put in place a framework to reduce risks attributable to Systemically Important Financial Institutions (SIFIs) in their jurisdictions.

A capital charge is levied on an agency and is designed to be a substitute for interest costs and a return on capital. At a minimum, the charge should cover the government's cost of borrowing.

- **TBTF** – SIBs are perceived as banks that are 'Too Big To Fail (TBTF)', due to which these banks enjoy certain advantages in the funding markets.
- **Basel III norms** – While the Basel-III Norms prescribe a capital adequacy ratio (CAR) of 8%, the RBI has mandated a CAR of 9% for scheduled commercial banks and 12% for public sector banks.

Capital Adequacy Ratio is the bank's ratio of capital to risk.

What is the need to take these precautions?

- **Damage domestic activity** – The failure of a bank will cause greater damage to the domestic economy.
- **Domino effect** – Failure of one bank could potentially increase the probability of failure of other banks.
- **Funding & asset side** – This chain effect operates on both sides of the balance sheet, there may be interconnections on the funding side as well as the asset side.
- **Impact on customer** – The costs for customers of a failed bank for the same service at another bank would be much higher.

10.9 PM Mega Integrated Textile Regions and Apparel (PM MITRA) Scheme

Why in news?

Recently Union government announced that seven mega textile parks under [PM Mega Integrated Textile Regions and Apparel \(PM MITRA\) scheme](#) will be set up in the first phase.

What is PM Mega Integrated Textile Regions and Apparel (PM MITRA) scheme?

- **Aim** -To create world-class textile industrial infrastructure that would attract large scale investment including foreign direct investment (FDI) and encourage innovation and job creation within the sector.
- **Execution - Ministry of Textiles**
- **Special Purpose Vehicle (SPV)** -With a 51% equity shareholding of the State government and 49% of the Centre, SPV will be formed for each park
- **Capital Support** -The Ministry of Textiles will provide financial support in the form of Development Capital Support up to Rs. 500 crore per park to the Park SPV.
- **Competitive Incentive Support (CIS)** –Up to Rs 300 crore per park to the units in PM MITRA Park
- **Plug and Play Facilities** -The parks will offer an excellent infrastructure, plug and play facilities as well as training and research facilities for the industry.
- **Investments** -Nearly Rs. 70,000 crores investment and 20 lakhs employment generation is envisaged through these parks.
- **First phase** - In first phase large textile parks spread across at least 1,000 acres will come up in 7 States - Tamil Nadu Karnataka, Telangana, Madhya Pradesh, Maharashtra, Gujarat, and Uttar Pradesh. The scheme will provide entire textile value chain, from fibre to fabric to garments.

How significant is this project?

- **Integrated Textile Value Chain**– The scheme provides an opportunity to create an integrated textile value chain.
- **Accelerate Exports** – The parks will accelerate the pace of exports in the textile value chain and will serve as a catalyst to achieve the export target of \$ 100 billion by 2030.
- **Single Window Clearances** -PM MITRA has single window clearances for quick decision making and timely implementation of the scheme.
- **Employment** -PM MITRA Parks will generate around 1 lakh direct and 2 lakh indirect employment per park.
- **FDI** -The scheme will be open for foreign direct investments (FDI).
- **Training centres and warehouses** -The scheme will have skill training centres and warehouses too
- **Micro, small and medium enterprises (MSME)** – Integration of MSMEs in the supply chain value of the MITRA parks will increase the employment and number of MSMEs.

The Micro, small and medium enterprises (MSME) sector is expected to control almost 80% of the textiles and apparels made in India.

Quick facts

- **The Apparel Park for Exports** – It was announced in 2002 to create a niche in foreign markets for apparel made in India.
- It provides financial assistance to set up apparel parks that house textile manufacturing units.
- The focus is on making high-quality textiles that are sought after in the international market.
- **The Scheme for Integrated Textile Parks (SITP)** – It was launched in 2005 by incorporating two Schemes
 - Apparel Parks for Export Scheme (APES) and
 - Textile Centre Infrastructure Development Scheme (TCIDS)
- **Aim** - To provide the industry with world-class infrastructure facilities for setting up their textile units.
- It is a model illustrating a user driven approach, with independent possession of the Micro, Small and Medium Enterprises (MSMEs).

10.10 Role of G20 in Promoting Blue Economy

Why in news?

India's G20 presidency would play an important role in promoting individual and collective actions to facilitate the transition towards a sustainable blue economy

What is blue economy?

- According to the *World Bank*, the **blue economy** is the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem"
- The term 'blue economy' includes not only ocean-dependent economic development but also inclusive social development and environmental and ecological security.

The G20 countries together account for around 45% of the world's coastlines and over 21% of the exclusive economic zones (EEZs).

What is G20?

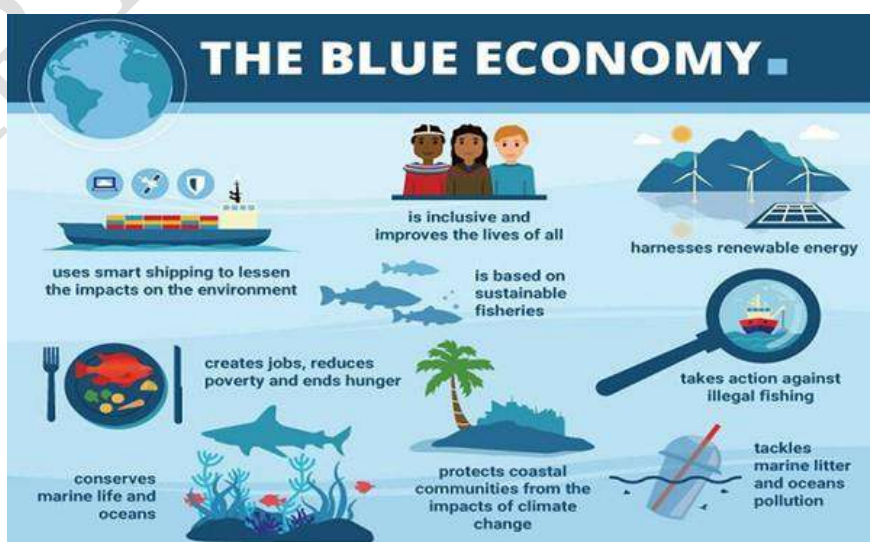
- The **Group of Twenty (G20)** is the premier forum for international economic cooperation.
- G20 plays an important role in shaping and strengthening global architecture and governance on all major international economic issues.
- India holds the Presidency of the G20 from 1 December 2022 to 30 November 2023.

Why the blue economy needs to be protected?

- Intensifying extreme weather events
- Ocean acidification and sea level rise
- Growing marine pollution
- Over-extraction of resources and unplanned urbanization.
- Marine pollution may have ripple effects across the globe.

What is the role of India's G20 Presidency in promoting blue economy?

- The aim is to promote adoption of high-level principles that guide sustainable and equitable economic development through the ocean and its resources



- This approach is consistent with Mr. Modi's call for the global adoption of '*Lifestyle for the Environment*' that promotes mindful utilization over mindless consumption patterns.

- India's G20 presidency would play an important role in promoting individual and collective actions to facilitate the transition towards a sustainable blue economy
- The blue economy is articulated as a key priority area under the Environment and Climate Sustainability Working Group

What initiatives were taken by G20 towards blue economy?

- **Osaka Blue Ocean Vision** -Aims to reduce the additional pollution by *marine plastic litter to zero* by 2050 through a comprehensive life-cycle approach
- **Coral Research and Development Accelerator Platform (CORDAP)** - CORDAP was launched in 2020
- It will bring together the best minds worldwide to accelerate the development of new technologies that support international *coral conservation* efforts
- **Ocean 20(O20)** -The O20 will *provide a platform for G20* countries political leaders, local and indigenous communities, civil society and private sector, to advance action for ocean solutions
- The O20 **is led by Indonesia** through their 2022 presidency of G20 with the support of the World Economic Forum

Sagarmala initiative	• Promotes port-led development.
Shipbuilding Financial Assistance Policy	• Encourages domestic ship-building.
Pradhan Mantri Matsya Sampada Yojana	• Promotes 'blue revolution' through sustainable and responsible development of the fisheries sector.
The Deep Ocean Mission	• Explores deep-sea resources in the exclusive economic zones (EEZ) and continental shelf as well as development of technology for harnessing them.
Coastal Regulation Zone notification	• To classify and better manage coastal regions and conserve ecologically sensitive coastal and marine areas including ecosystems.
Plastic Waste Management Rules (2022)	• Banned select single-use plastic items and introduced policies for extended producer responsibility in waste management.

Initiatives to promote Blue Economy

10.11 International Monetary Fund (IMF) bailout

Why in news?

Recently Sri Lanka secured a \$3 billion bailout from the International Monetary Fund (IMF) amid the worst economic crisis.

What is IMF?

- **Establishment** - The IMF was established in 1944 in the aftermath of the Great Depression of the 1930s.
- **Aim** - To bring about international economic coordination to prevent competing currency devaluation by countries trying to promote their own exports.
- **Membership** -IMF has 190 countries as its members.
- **Headquarters** –Washington, D.C., United States.
- **Role** - IMF is the last resort lender for countries facing severe economic crises.
- The IMF fosters international financial stability by providing
 - Policy advice
 - Financial assistance
 - Capacity development
- IMF provides financial support to countries hit by crises in order to restore economic stability and growth.
- IMF does not lend for specific projects.
- **Resources of IMF** - IMF funds come from three sources
 - Member quotas

- Multilateral borrowing agreements
- Bilateral borrowing agreements

What is the IMF bailout?

- **Bailout** - Means extending support to an entity facing a threat of bankruptcy.
- **Lending** - The IMF lends money countries the form of Special Drawing Rights (SDRs)
 - Special Drawing Rights (SDRs) is a basket of five currencies, US dollar, Euro, Chinese Yuan, Japanese Yen and British Pound
- The bailout can be executed in the form of loans, cash, bonds, or stock purchases.
- **Reasons for bailout** - Countries seek IMF bailouts for the following reasons
 - To resolve macroeconomic risks
 - To solve currency crises
 - To meet external debt obligations
 - To buy essential imports
 - To push the exchange value of their currencies
- **Conditions** - The countries are expected to meet following conditions for the IMF bailout
 - Structural reforms such as fiscal transparency, tax reforms.
 - Reforms in state-owned enterprises.
 - Reforms in macroeconomic variables like monetary and credit aggregates.
 - Reforms in international reserves.
 - Reforms in fiscal balances and external borrowing.

What about the crisis in Sri Lanka and Pakistan?

- **Sri Lankan economy crisis** - Sri Lanka witnessed a sharp rise in domestic prices and the exchange value of their currencies plunged.
- Currency crisis are usually the result of mismanagement of the currency by its central bank.
- It is partly contributed to decline of foreign tourists during the Covid-19 pandemic.
- **Pakistan economy crisis** – It is a part of 2022-2023 political unrest in Pakistan.
- The crisis caused severe economic challenges for months due to which food, gas and oil prices have risen.
- **General factors that lead to economic crisis**
 - Inappropriate fiscal and monetary policies
 - Large current account and fiscal deficits
 - High public debt levels
 - Exchange rate fixed at an inappropriate level
 - Weak financial system
 - Political instability and weak institutions

What are the pros and cons of IMF bailout?

Pros	Cons
● Ensures the survival of a country amid economic turmoil ● Ensures that the functioning of essential industries and economic systems ● Provide technical expertise to the affected country on how to implement reforms to strengthen the economy and institutions	● Can result in reduced government spending and higher taxes, measures ● Can also create a sense of dependency on external funding ● Affects the investing environment in the country

India and the IMF

- India is a founder member of the IMF.
- India has not taken any financial assistance from the IMF since 1993.
- Repayments of all the loans taken from International Monetary Fund have been completed on May 2000.
- Finance Minister is the ex-officio Governor on the Board of Governors of the IMF.
- RBI Governor is the Alternate Governor at the IMF.
- India's current quota in the IMF is SDR (Special Drawing Rights) 5,821.5 million making it the 13th largest quota holding country at IMF and giving it shareholdings of 2.44%.
- India has invested SDR 750 million through nine note purchase agreements with the IMF.

Note - Purchase agreements is usually a temporary bilateral arrangement for an initial period of one year which may be extended by a period of up to two years and the principal of the notes is to be denominated in SDR

10.12 Expanding the Scope of Angel Tax

Why in news?

The Finance Bill, 2023, unveiled by Finance Minister Nirmala Sitharaman has proposed to amend Section 56(2) VII B of the Income Tax Act.

What is angel tax?

- Angel taxes are taxes funds raised by startups if they exceed the fair market value of the company.
- It is a 30% tax that is levied on the funding received by startups from an external investor.
- Section 56(2) VII B of the Income Tax Act colloquially known as the angel tax was first introduced in 2012.
- **Aim** - To discourage laundering of unaccounted money via unlisted firms disguised as capital investments.
- The tax covers investment in any private business entity and startups.
- **Exemptions** - The only classes of investors whose investments are exempted from angel tax are
 - SEBI-registered CAT I and II AIFs (alternate investment fund)
 - IFSCA-registered CAT I and II AIFs (under the IFSCA FME Regulations, 2022)

An angel investor is usually a high-net-worth individual who funds start-ups at the early stages, often with their own money.

What are the changes to the provision of angel tax?

Earlier provisions	Amended provisions
• In 2019 the Government announced an exemption from the Angel Tax for startups on fulfillment of certain conditions. • This levy is applicable only to domestic investments.	• The government has proposed to include foreign investors in the ambit of angel investors to startups. • When a start-up raises funding from a foreign investor that too will now be counted as income and be taxable

What are the concerns with the amendment?

For start-ups

- **Financing** - The move could adversely impact financing available to the start-ups, which have already been reeling under a funding winter since 2022.
 - **Funding winter** means an extended period of reduced capital inflows to startups.
- **Additional tax liability** - Startups faced by angel tax notices are required to pay 30% of the investment raised as the tax amount and twice that amount as penalty for violating the exemption conditions.

- **Reverse flipping** - The proposed changes could compel more startups to flip overseas.

Other concerns

- **Illogical** - Income tax, by definition, is levied on the profits made by an enterprise from carrying on a business activity.
- Imposing it on capital raised is illogical.
- **Unfair** - It seems unfair to impose tax on nascent ventures which require higher risk-taking by investors.
- **Calculation of fair market value** - To arrive at the tax liability, unlisted firms are required to calculate the fair market value of their shares which is quite impractical for early-stage ventures.

A startup is defined as an entity that is headquartered in India which was opened less than 10 years ago and has an annual turnover less than Rs 100 crore.

11. AGRICULTURE

11.1 Cotton: Crying out for change

Why in news?

Cotton farmers in Northern India suffered heavy losses in the last kharif season.

What is the impact of low cotton productivity?

- **Imbalance in demand-supply** – Cotton productivity, has continuously been decelerating, causing imbalance in demand-supply of cotton and uncertainty in the cotton textile industry.
- **Increase in imports** – This dip in cotton production has forced the textile industry to rely on imports, which increased to 35.3 lakh bales worth ₹8,339.26 crore in 2018-19.
- The relaxation in import duty structure would hit the balance of trade in cotton, which remained favourable over the last two decades.
- **Decrease in exports** – On the other hand, cotton exports, which peaked in 2014-15, have since declined.

Productivity estimate

- The cotton productivity estimate was reported to be at its lowest in the North zone comprising of Punjab, Haryana and Rajasthan.

North zone cotton

- It recorded the highest cotton yield in 2019-20 is now down by over 30%.

Reasons

- The losses are mounting due to the rising cost of cultivation, climate induced change in pest dynamics and rampant sale of unauthorised seeds and unchecked pesticides sprays.

Health & Environment

- The boom and tractor mounted sprayers are back with unimaginable consequences on human health and environment.

Climate Change

- Climate change induced weather aberration, widespread infestation of boll devouring pink bollworm, new tobacco streak virus disease and boll rot have recently threatened cotton farmers.

Crop diseases

- The white fly transmitted severe cotton leaf curl virus and sudden outbreak of para wilt have worsened the situation for North zone farmers.

Lack of infrastructure

- The cotton sector seems to be dogged by some serious structural deficiencies.

Reasons for less productivity

What are the strategies used to overcome the challenges?

- **HDPS** – The cropping system of cotton must gradually undergo a systematic change to high density planting system (HDPS).
- **Dibbling** – Our farmers practice dibbling based sowing of bushy-type, long duration hybrid cotton seeds at a large spacing accommodating fewer plants per acre.
- The farmers harvest seed cotton 3-4 times in a season spanning 180 to 280 days in different cotton growing zones.
- **Hybrid Cotton** – New erect type hybrid cotton genotypes have been introduced to optimise plant population.

The HDPS is a new cropping system of accommodating more plants per unit area supported by technological inputs for weed management, defoliation and mechanical picking.

- However, but this forms just one-fourth of what is being practiced under HDPS in countries with high cotton yield.

What is the way forward?

- **Policies** – The government-led policy paradigm on cotton must give way to progressive evidence-based policies on pricing of seeds and safeguarding intellectual property.
- **Intellectual Property Rights** – Enforcement of IPR on new varieties suitable for HDPS while ensuring farmers' rights must be strengthened to attract investment in R&D and breeding of high-density suitable genotypes.
- **Transfer of Seeds** – Exchange of pre-breeding germplasm under material transfer agreement (MTA) and access and benefit sharing (ABS) mechanism for cross border material transfer must be prioritised.
- **Price Control** – The price control of cotton seeds under the Cotton Seed Price (Control) Order, 2015 has discouraged breeding activities and stalled introduction of much needed technologies for weed management.
- This has also fuelled the growth of illegal market for herbicide tolerant (HT) cotton.

12. ENVIRONMENT

12.1 International Courts and Climate Change

Why in news?

A group of 16 countries has launched a gallant effort to fight the problem of climate change at the United Nations (UN).

What is the issue?

- Led by **Vanuatu**, an island country in the **South Pacific Ocean**, the group seeks an advisory opinion from the International Court of Justice (ICJ) on the issue of climate change.
- In the 27th UN Climate Change Conference (COP-27), countries failed to narrow their differences on critical issues such as reducing greenhouse gas emissions.
- This perfectly exemplifies the failure of the international community to get its act together on the issue of climate change.

Small Island Developing States (SIDS) are a distinct group of 38 UN Member States and 20 Non-UN Members/Associate Members of United Nations regional commissions that face unique social, economic and environmental vulnerabilities.

What is the initiative taken by Vanuatu?

- **Small Island Developing (SID)** states such as Vanuatu are most vulnerable to rising temperatures and sea levels.
- Vanuatu launched an initiative, through the UNGA, which seeks advisory opinion from the ICJ to clarify the legal obligations of all countries to prevent the adverse effects of climate change.
- Since then, the initiative has gathered momentum with reportedly more than 100 countries backing the idea.

To know about Vanuatu – [Click Here](#)

What are the functions of the International Court of Justice (ICJ)?

- The ICJ has two types of jurisdictions - contentious and advisory.
- **Contentious jurisdiction** – It refers to resolving legal disputes between consenting states, under advisory jurisdiction.
- The UN General Assembly (UNGA), the Security Council (SC) and other specialised bodies of the organisation can request the ICJ for an opinion on a legal question.
- **Advisory jurisdiction** - Unlike decisions given under the contentious jurisdiction, the ICJ's advisory opinions are non-binding.
- The ICJ's advisory opinion on climate change will also be handy in climate-related litigation at the national level.

No-harm principle - states are under an obligation that activities within their jurisdiction do not damage other countries.

To know more about the ICJ – [Click Here](#)

What are the legal questions arising out of the initiative?

- If Vanuatu's request for an advisory opinion goes through, the ICJ will have multiple questions to address regarding climate change and reparations.
- **International Obligations** – There comes a question on the international obligations of countries toward the protection of the climate system from anthropogenic emissions of greenhouse gases.
- The ICJ will interpret and clarify the existing international climate change law enshrined in various international environmental treaties.
- It will also use the general and customary international law (CIL) to fill the gaps in these treaties.
- Thus, the ICJ can use the 'no-harm' principle, an important part of CIL, to shed light on unclear provisions of the Paris Agreement.
- **Legal Consequences** – Another question is regarding the legal consequences for states that have caused significant harm to the climate system.
- The rich countries that have historically caused maximum greenhouse gas emissions should compensate the developing countries bearing a disproportionate brunt of climate change.
- At COP-27, while it was agreed to establish a "[loss and damage fund](#)" to financially assist vulnerable developing countries, there is little clarity on which countries will provide the funding.
- Moreover, the connection between funding and the historical responsibility of developed countries in emissions is yet to be determined.
- **Role of ITLOS** – The International Tribunal for the Law of the Sea (ITLOS) has been requested to determine the specific obligations of the countries about preventing, controlling, and reducing pollution of the marine environment.

*The ITLOS is an independent judicial body established by the **United Nations Convention on the Law of the Sea** to adjudicate disputes arising out of the interpretation and application of the Convention.*

What is the way forward?

- The challenges of ocean warming, sea level rise and ocean acidification are all linked to the marine environment.
- As part of a multi-pronged approach to save our planet, one should welcome the role of international courts.
- Developed countries and groupings like the G-20 should support these laudable initiatives of the SID states.
- India, as the president of the G-20, should take a lead given its relentless emphasis on [LiFE campaign](#).

12.2 World Wildlife Day 2023 & CITES

Why in news?

March 3 is known as World Wildlife Day (WWD), marked annually to draw attention to issues of conservation of flora and fauna.

Why is World Wildlife Day marked?

- In 2013, the *United Nations General Assembly (UNGA)* proclaimed March 3 as the *UN World Wildlife Day* to celebrate and raise awareness of protecting the world's wild animals and plants.
- **CITES** – The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was signed in 1973 on this day.
- It is considered a landmark agreement on conservation that focuses on ensuring the sustainability of endangered species.
- **Theme for 2023** – Partnerships for Wildlife Conservation.

What is the CITES?

- CITES is an **international agreement** between governments.
- **Aim** – Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.

- **Protected Species** – It accords varying degrees of protection to more than 37,000 species of animals and plants.
- They range from live animals and plants to wildlife products derived from them, including food products, exotic leather goods, medicines, etc.
- **Secretariat** – The CITES Secretariat is administered by UNEP and is located in Geneva, Switzerland.
- **COP** – The Conference of the Parties (COP) is the supreme consensus-based decision-making body, comprises all its parties.
- Currently, there are 184 parties to the convention, including India.
- **CITES in India** – Both the Ministry of Environment, Forests and Climate Change, the *Wildlife Crime Control Bureau*, a statutory body under the Ministry, are meant to combat wildlife crime.
- It assists and advises the customs authorities in the inspection of the consignments of flora and fauna as per the provisions of the *Wild Life Protection Act of 1972*.

Appendices	• The species covered under CITES are listed in 3 <i>Appendices</i>, according to the degree of protection they need.
Appendix I	• It includes species <i>threatened with extinction</i>. • Trade in specimens of these species is permitted rarely, only in exceptional circumstances, such as gorillas, and lions from India.
Appendix II	• It includes species <i>not necessarily threatened with extinction</i>, but in which trade must be controlled to ensure their survival. • For example, certain kinds of foxes and Hippopotamuses.
Appendix III	• It contains species that are <i>protected in at least one country</i>, which has asked other CITES Parties for assistance in controlling the trade. • For example, Bengal fox or the Golden Jackal from India.

To know more about CITES – [Click Here](#).

Why is CITES criticised?

- **Legitimises Illegal Trade** – Having wildlife allowed to be traded, legitimises their movement and increases their illegal trade.
- **Lagging behind** – CITES protections lag after a species is determined to be threatened by international trade.
- For example, while pangolins were finally added to Appendix I in 2017, an estimated million were trafficked between 2000 and 2013.
- Many animals that are in the wildlife trade are not protected by CITES.
- **Trade related issues** – If a party violates the convention, CITES can respond with sanctions, which prevent a country from trading in CITES-listed species.
- **Voluntary Membership** – Due to the voluntary nature of CITES membership, nobody is strictly bound to follow its direction.
- **Laxity** – CITES has been questioned on matters such as the ivory trade being allowed at times despite the convention banning it in 1989.
- CITES has had some **successes**, helping in recovering the South American vicuña (a small member of the camel family) and the Nile crocodile.

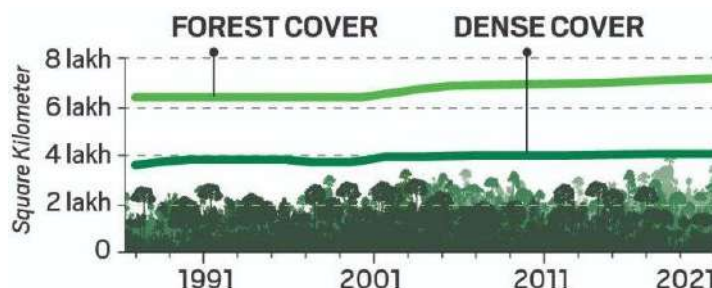
12.3 The problems with Compensatory Afforestation in India

Why in news?

India's target of increasing its forest and tree cover absorb an additional amount of 2.5 billion to 3 billion tonnes of carbon dioxide equivalent by 2030 is a relatively difficult one to achieve.

What is the issue?

- **Threat to forests** – Forests are under stress due to the need for rapid industrial and infrastructure development, and accompanying urbanisation.
- **Government initiatives** – [Green India Mission](#), national afforestation programme, and the tree plantation exercises along the highways and railways, help improve forest cover.



- The national rural employment guarantee scheme (MGNREGS) and Namami Ganga also have significant afforestation components.

What is Compensatory Afforestation Management and Planning Authority (CAMPA) fund?

- The SC in 2002 in Godhavarman Vs Union of India case ordered the creation of CAMPA fund.
- CAMPA was established in 2004 to manage the Compensatory Afforestation Fund (CAF) and it acts as the custodian of the CAMPA fund.
- National Compensatory Afforestation Fund under the Public Account of India and State Compensatory Afforestation Fund under the Public Account of each state was created.
- The State Funds will receive 90% of the payments while the National Fund will receive the remaining 10%.
- **Salient Features** – These Funds will receive payments for:
 1. Compensatory Afforestation
 2. Net Present Value (NPV) of forest
 3. Other project specific payments

Afforestation

- It seeks to ensure that forest lands getting diverted for non-forest purposes, like industrial development, is mandatorily accompanied by afforestation effort.

Legal mandate

- It made a legal requirement through the Compensatory Afforestation Fund Act of 2016, does ensure that newer parcels of land are earmarked for developing them as forests.

Funding

- Project developers, public or private, are required to fund the entire afforestation activity on these new lands.

Goods & Services

- Newly afforested land cannot be expected to immediately start delivering the range of goods and services that the diverted forests were providing.

Net Present Value (NPV)

- Project developers are asked to pay for the NPV of the forests being cleared, based on a calculation decided by an expert committee.

Compensatory Afforestation

- These Funds will be primarily spent on afforestation to compensate for loss of forest cover, regeneration of forest ecosystem, wildlife protection and infrastructure development.
- The Bill also establishes the National and State Compensatory Afforestation Fund Management and Planning Authorities to manage the National and State Funds.

What are the problems associated with the compensatory afforestation practice?

- **No suitable land** – Besides the low utilisation of funds, lack of availability of suitable land remains the biggest problem for compensatory afforestation.
- **Distributed land** – While the law mandates at least an equal area of land to be provided for compensatory afforestation, rarely is a contiguous stretch of land made available for this purpose.
- The total area of land is often distributed over 20 or more different locations.
- **Monocultures** – Companies often indulge in planting plantations in the available land, which is critical because plantations are monocultures, meaning they contain only one species of plants.
- A key element of any forest is biodiversity.

COMPENSATORY AFFORESTATION FUND BILL

PRINCIPLE OBJECTIVE

SETTING UP OF A

1 National Compensatory Afforestation Fund

2 State Compensatory Afforestation Fund

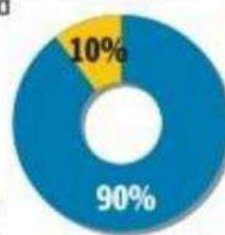
These authorities will monitor the utilisation of funds

Any user agency which diverts forest land for non-forest purpose is required to deposit prescribed amount

90% of collected payments will go to state fund

10% of collected payments will go to national fund

(This provision may be amended as standing committee wants state fund to get 95% of the payments)



Funds will be used for

1. Increasing forest cover
2. Forest regeneration
3. Wildlife protection
4. Related activities to protect green cover

Bill is also meant for setting up

1. A national management and planning authority at the Centre
2. State-level authority in respective states

- **Biotic Pressure** – Forest officials point to biotic pressures, the challenge the plantations face from nearby human habitations and cattle.
- **Greenwashing** – Critics say compensatory afforestation had legitimised clearing of forests, and see it as an example of greenwashing.
- However, clearing of forests for other purpose cannot be entirely eliminated, compensatory afforestation is a good mechanism for attempting to make up for these losses to some extent.

12.4 Green Hydrogen Superpower

Why in news?

Green hydrogen is a critical industrial fuel of the 21st century and India is well-positioned to show leadership.

What is green hydrogen?

- It is a type of hydrogen produced by splitting water through electrolysis, using electrolyser powered entirely by renewable power sources.
- **Advantages** – It could replace fossil fuels and decarbonize a range of sectors such as petroleum refining, fertiliser production, steel production, chemicals, transport, etc.
- **Disadvantages** – It is not commercially viable at present and is expensive to be manufactured.

	Terminology	Technology	Feedstock/ Electricity source	GHG footprint*
PRODUCTION VIA ELECTRICITY	Green Hydrogen	Electrolysis	Wind Solar Hydro Geothermal Tidal	Minimal
	Purple/Pink Hydrogen		Nuclear	
	Yellow Hydrogen		Mixed-origin grid energy	Medium
PRODUCTION VIA FOSSIL FUELS	Blue Hydrogen	Natural gas reforming + CCUS Gasification + CCUS	Natural gas coal	Low
	Turquoise Hydrogen	Pyrolysis		
	Grey Hydrogen	Natural gas reforming	Natural gas	Medium
	Brown Hydrogen			
	Black Hydrogen	Gasification	Brown coal (lignite)	High
			Black coal	

* GHG footprint given as a general guide but it is accepted that each category can be higher in some cases.

All about [Green Hydrogen](#).

What is the National Green Hydrogen Mission?

- The National Green Hydrogen Mission was first announced by the Prime Minister in his Independence Day speech in 2021.
- **Objectives** – The mission is aimed at making India a global hub for the production of green hydrogen.
- The mission also aims to:
 1. Creation of export opportunities for green hydrogen.
 2. Decarbonisation of the energy sector.
 3. Development of indigenous manufacturing capacities.

All about [National Green Hydrogen Mission](#).

What are India's commitments?

- **Electricity** – India has committed to 50% electricity capacity from non-fossil sources by 2030.
- Most industrial greenhouse gas emissions in India come from steel, cement, fertilizers and petrochemicals.

- **Green hydrogen** – India is targeting at least 5 million tonnes of production of green hydrogen by 2030, which is larger than that of any single economy.

What is the way forward?

- **G20** – India's G20 presidency is an opportunity to craft rules for a global green hydrogen economy.
- These rules must address operational threats, industrial competitiveness and strategic threats.
- **Global network** – India should promote a global network on green hydrogen via which companies could collaborate.
- **India's geography** – With abundant sunshine and significant wind energy resources, India is geographically blessed to become one of the lowest-cost producers of green hydrogen.
- India is well-positioned to show leadership, in our collective interest and that of the planet.

12.5 High Seas Treaty

Why in news

The UN member states agreed on a treaty for protecting marine life in international waters that lie outside the jurisdiction of any country.

What are the high seas?

- According to the *1958 Geneva Convention on the High Seas*, they are the parts of the sea that are not included in the territorial waters or the internal waters of a country.
- It is the area beyond a country's *Exclusive Economic Zone* which extends up to *200 nautical miles or 370 km* from the coastline & till where a nation has jurisdiction on living & non-living resources.

No country is responsible for the management and protection of resources on the high seas.

How important are the high seas?

- **Hub of marine life** – The high seas account for more than 60% of the world's ocean area and cover about half of the Earth's surface, which makes them a hub of marine life.
- **Role in climate change** – The high seas regulate the climate by playing a fundamental role in planetary stability by mitigating the effects of climate change.
- They absorb carbon and store solar radiation and distribute heat around the globe.
- It provides a wealth of resources, like seafood, raw materials, genetic & medicinal resources, & air purification.

What are the concerns associated with high seas?

- **El Nino** – They are affected by phenomena like the [El Nino](#), and are also undergoing acidification, all of which endanger marine flora and fauna.
- Several thousand marine species are at a risk of extinction by 2100 if current warming and [acidification](#) trends continue.
- **Anthropogenic pressures** – These include seabed mining, noise pollution, chemical spills and fires, disposal of untreated waste, overfishing, introduction of invasive species, and coastal pollution.

A marine protected area (MPA) is defined as a geographically defined marine area that is designated and managed to achieve specific long-term biodiversity conservation objectives and may allow, where appropriate, sustainable use provided it is consistent with the conservation objectives.

- **Least protected** – Despite the alarming situation, the high seas remain as one of the least-protected areas, with only about 1% of it under protection.

What is the treaty about?

- The draft agreement recognises the need to address biodiversity loss and degradation of ecosystems of the ocean.
- It places 30% of the world's oceans into protected areas, puts more money into marine conservation and covers access to and use of marine genetic resources.

What is the timeline of the treaty?

- **UNCLOS** – In 1982, the UN Convention on the Law of the Sea (UNCLOS) was adopted, which delineated rules to govern the oceans and the use of its resources.

The 30x30 pledge was made by the historic Kunming-Montreal Global Biodiversity Framework (GBF), at the COP15.

- However, there was no comprehensive legal framework that covered the high seas.
- The UNGA decided in 2015 to develop a *legally binding instrument* within the framework of UNCLOS.
- The Intergovernmental Conference (IGC) was convened to frame a legal instrument on *Marine Biodiversity of Areas beyond National Jurisdiction (BBNJ)*.
- The *European Union launched the High Ambition Coalition* on BBNJ to finalise the agreement.
- **30x30 pledge** – At the Conference of Parties of the Convention on Biological Diversity (COP15), countries agreed to protect 30% of oceans by 2030, as part of the '30 x 30 pledge'.

What are the key features of the treaty?

- **Benefit-sharing committee** – The activities concerning marine genetic resources of areas on high seas should be in the interests of all States and for the benefit of humanity.
- They have to be carried out exclusively for peaceful purposes.
- **Environmental impact assessments** – Signatories will have to conduct environmental impact assessments before the exploitation of marine resources.
- **Rights over genetic resources** – No State can claim its right over marine genetic resources of areas beyond national jurisdiction, the draft adds.
- **Clearing House Mechanism (CHM)** – Members will have to provide CHM, established as part of the treaty, with details like the objective of the research, geographical area of collection, names of sponsors, etc.
- **Funding** – A special fund will be established which will be fixed by the conference of parties who will also oversee the functioning of the treaty.

12.6 Water Trade

Why in news?

India's per capita water availability has touched the water-stressed benchmark, and is likely to reach the water-scarce scenario by 2050.

The Murray-Darling basin in Australia is a great example of how water credit system works successfully.

What is the issue?

- India's water resources are under tremendous pressure.
- India receives more than 80% of the rainfall during 4 months of the year.
- **Unequal spatial distribution** – The *Barak and Brahmaputra basins* have a per capita water availability that is more than that of the *Ganga basin*.

What is the water credit system about?

- **Water credits** – It deals with the transaction between water deficit and water surplus entities within a basin and represents a fixed quantum of water that is conserved or generated.
- **Carbon credits** – It is almost a mirror image of the concept of carbon credits.
- However, unlike carbon credits, the water credit system is confined to *hydrological boundaries*, that is, river basin or watershed.
- **Multiplayer approach** – Industries can buy water credits from water-rich municipalities, who are fund crunched to finance large-scale floodwater

Australia	• India should learn from global water trading successes like that of Australia, to lay a roadmap for water trading and also ensure water regulation by setting up related authorities.
Chicago Mercantile Exchange	• Participation in water credit system is seen from actual users such as farmers and municipalities and financial investors.
Improved water quality	• With the effective implementation and stringent regulatory standards, water trading also paves way for water quality standards.
Recycling	• It promotes growth in the recycle and reuse markets through the utilisation of heavy metals organics released in the water from both the industrial and agricultural sectors.
Strengthen economic ties	• The credit system can be used to highlight the water quality merits and strengthen economic relations both at a global as well as regional level.
Reduce government's burden	• The system can reduce the burden of the government that releases funds towards mitigation as well as post-disaster events such as floods and droughts.
Insurance	• The markets can even insure irrigated and rain dependent agriculture against droughts by locking in water prices.

Significance of Water Credit System

harvesting, & wastewater treatment projects, aiding in conserving water.

What are the limitations of the system?

- **Rich institutions dominating** – An innate flaw of this water credit system is that the market is dominated by a small number of rich institutions or sellers.
- Hence, rich sellers can control the market by buying credits from the poor, and continue to misuse the shared water resources.
- **Lack of awareness** – The market competition among sellers is further reduced due to the lack of awareness about the water credit concept.

What is the way forward?

- There has been no strong dialogue on the implementation of a water credit system, so far.
- India needs to aggressively alter and adopt practices to expand finance opportunities within the water sector.
- It is anticipated that India could face opposition if water is made a tradable commodity.
- In such a case, a regulatory body must be in place to facilitate and successfully maintain free market conditions.

12.7 The rise of the ESG regulations

Why in news?

Environmental, Social and Governance (ESG) considerations need to be included by investors in a company's risk profile in order to accurately assess the enterprise.

What is Environmental, Social and Governance (ESG)?

- **ESG** – Environmental, social, and governance (ESG) investing refers to a set of standards for a company's behaviour used by socially conscious investors to screen potential investments.
- **Environmental criteria** – It considers how a company safeguards the environment, including corporate policies addressing climate change, for example.
- **Social criteria** – It examines how it manages relationships with employees, suppliers, customers, and the communities where it operates.
- **Governance** – It deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights.

How ESG differs from CSR?

- **CSR** – India has a robust [corporate social responsibility \(CSR\)](#) policy that mandates that corporations engage in initiatives that contribute to the welfare of society.
- This mandate was codified into law with the passage of the 2014 and 2021 amendments to the Companies Act of 2013.
- **CSR Fund** – It requires companies with a net worth of ₹500 crores or minimum turnover of ₹1,000 crores or net profit of ₹5 crores in any financial year, to spend at least 2% of their net profit over the preceding 3 years on CSR activities.
- On the other hand, ESG regulations, differ in process and impact.
- **U.K. Modern Slavery Act** – Companies with annual sales of £36 million should publish the efforts they have made towards analysing the risks of human trafficking, child labour and debt bondage in their supply chain.
- **EU's Sustainable Finance Disclosure Regulation** – It requires banks, financial markets to disclose how they integrated sustainability risks into their investment processes.

The BRSR requirements are based on the National Guidelines for Responsible Business Conduct (NGRBC), which mandate that businesses: Conduct and govern themselves with Ethics, Transparency and Accountability.

What are the implications for Indian companies?

- **Different from CSR** – Compliance with ESG regulations, both originating in India and elsewhere around the world, thus, pose a significantly different challenge than India's CSR regulations.
- **China factor** – India should take full advantage of the growing decoupling from China and play a more prominent role in global supply chains and the global marketplace overall.
- This is particularly true when the supplier's own supply chains have several layers.

- **Shell companies** – Ownership that is obscured through shell companies can present additional challenges.
- **Due diligence** – ESG due diligence needs to be supported within the company with detailed procedures for assessing risks and controls for assuring that no corners are cut.

12.8 Waste to Energy Projects in India

Why in news?

Kerala government recently announced the State's first waste-to-energy project in Kozhikode.

What is a waste to energy project?

- **Waste-to-energy projects** - Waste-to-energy projects use *non-recyclable dry waste* to generate electricity. The waste is combusted to generate heat, which is converted into electricity.
- The waste to energy projects is also called a *trash-to-energy*, municipal waste incineration, energy recovery, or resource recovery plant.
- **Status of for waste to energy** - The first waste-to-energy plant was set up in Timarpur in Delhi in 1987.
- A total of 14 waste-to-energy plants have been installed in India, out of which seven plants were closed.
- Total quantity of solid waste generated in the country was 1,50,761 tonnes per day in 2019-'20.



What are the technologies available for waste to energy?

- **Biomethanation** – It is anaerobic digestion of organic materials which is converted into biogas.
- Anaerobic digestion (AD) is a bacterial fermentation process that operates without free oxygen and results in a biogas
- **Incineration** - Incineration technology is complete combustion of waste with the recovery of heat to produce steam that in turn produces power through steam turbines.
- **Gasification** - Gasification is a process that uses high temperatures (500-18000 C) in the presence of limited amounts of oxygen to decompose materials to produce synthetic gas.
- **Pyrolysis** - Pyrolysis uses heat to break down combustible materials in the absence of oxygen, producing a mixture of combustible gases, liquids and solid residues.

What is the significance of waste to energy projects?

- Effective disposal of waste
- Landfill and dump yards can be reduced
- The petroleum import can be reused leading to increased economic growth
- It can be the alternate source of energy to promote [circular economy](#)

What is the way forward?

- People should follow strict segregation practices and also process biodegradable waste.
- Municipality must ensure that only non-biodegradable dry waste is sent to the plant and separately manage the other kinds of waste.
- Municipality or the department responsible for Solid Waste Management should be practical about the high cost of power generation, and include the State electricity department.
- A tripartite agreement between the municipality, the plant operator, and the power distribution agency.

Huge gap

- The huge gap between the quantity and quality of waste being generated, and the capacity of the municipality to manage that waste. The municipal waste has low calorific value and high moisture content which is not suitable for electricity generation.

Low inert content

- The waste has inert content which is not suitable for burning in Waste-To-Energy Project. The requirement of fuel makes the Waste-To-Energy Project unviable.

High costs of energy production

- The cost of generating power from waste is around Rs 7-8/unit. Most of the projects are built in ecologically sensitive areas which also damage the environment.

Reasons for failure

12.9 Landfill fire in Kochi's Brahmapuram of Kerala

Why in news?

Recent incident of landfills fire in Kochi's Brahmapuram of Kerala.

What is a landfill?

- A landfill also known as a tip, dump, rubbish dump, garbage dump, or dumping ground, is a site for the disposal of waste materials.

Types of landfills

- Municipal Solid Waste Landfills (MSWLFs)** – Specifically designed to receive household waste, as well as other types of nonhazardous wastes.
- Bioreactor Landfills** – A type of MSWLF that operates to rapidly transform and degrade organic waste.
- Industrial Waste Landfill** – Designed to collect commercial and institutional waste (i.e. industrial waste), which is often a significant portion of solid waste, even in small cities and suburbs.
- Construction and Demolition (C&D) Debris Landfill** – C&D materials often contain bulky, heavy materials, such as concrete, wood, metals, glass and salvaged building components.
- Coal Combustion Residual (CCR) landfills** – An industrial waste landfill used to manage and dispose of coal combustion residuals (CCRs or coal ash).
- Hazardous Waste Landfills** - Facilities used specifically for the disposal of hazardous waste.

What are the impacts of landfill fire?

- Greenhouse gases**- The landfill fires emits greenhouse gases affecting the environment
- Schools Education System** -Affects schools education system since landfill fire leads to closure of schools in nearby areas
- Carcinogens** -The waste may contain carcinogens materials which increases the chances of being affected by cancer causing dyes

What are the various challenges faced by municipal corporation in safe disposal of waste?

- Lack of Funding
- Communication gap between central and state government
- Failure of waste-to-energy projects
- Loopholes in the municipal corporations at every stage of waste management
- Lack of manpower
- Insufficient number of professionals in the waste management technology field.
- Lack of research and development for new technological practices
- Lack of coordination by public in segregation of waste at source

Waste containing flammable materials

- Openly disposed waste includes flammable material like low-quality plastics, which have a relatively higher calorific value of about 2,500-3,000 kcal/kg

Summer being dry and hot

- The biodegradable fraction composts much faster, increasing the temperature of the heap to beyond 70-80° C.

Low efficiency in waste processing

- India's municipalities have been collecting more than 95% of the waste generated in cities but the efficiency of waste-processing is only 30-40%

Poor segregation of waste at source

- Municipalities are expected to process the wet and dry waste separately and to have the recovered by-products recycled

Huge unprocessed waste

- Remains in open landfills for long periods.

Causes of landfill fire

What are the measures to combat landfill fire?

Precautionary Measures	Short Term Measure	Long Term/Permanent Solutions
- The landfill site should be equipped with water tankers with sprinklers for immediate action. - The municipality should work with the nearest fire department and have a plan of action in advance.	- The first immediate action is to divide a site into blocks depending on the nature of the waste - Blocks that have been capped using soil are less likely to catch fire, so	- Clear the piles of waste through bioremediation - Bio mining - should be introduced for safe and low cost disposal of waste - Completely cap the site with soil

- Waste-processing workers (plant operators, segregators, etc.) should have basic fire-safety and response training - The municipality should have routine round-the-clock video surveillance of the most flammable portion of the landfill	- portions like these should also be separated out - To advice people to stay in indoors - Distribution of N95 masks to the people	
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What are the government measures for solid waste management?

- Solid Waste Management Act 2002** - An Act to establish a National Solid Waste Management Corporation
- Solid Waste Management Rules (SWM), 2016** – The rules have mandated the source segregation of waste.
- Pollution Control Boards** - The Pollution Control Boards are directed to take action for persuading the civic authorities in proper management of municipal solid wastes.

Bio mining is the technique of extracting metals from ores and other solid materials typically using prokaryotes, fungi or plants.

12.10 Plastics and its Problems

Why in news?

Plastic recycling could be a solution to growing problems of plastics.

What are plastics?

- Plastics are a group of materials, either synthetic or naturally occurring, that may be shaped when soft and then hardened to retain the given shape.
- Plastics are polymers. A polymer is a substance made of many repeating units
- Plastics can be divided into two general categories—thermoplastics and thermosets.
 - Thermoplastics are defined as polymers that can be melted and recast almost indefinitely.
 - Thermosets is a polymer that irreversibly becomes rigid when heated

What are the advantages of plastics?

- Low production cost.
- Could be moulded easily.
- Lightweight, translucent, transparent, and opaque.
- Resistant to corrosion.
- Poor conductor of heat and electricity.
- Minimize the food wastage.

What are the disadvantages of plastics?

- Plastics manufacturing also involves the addition of potentially hazardous compounds like stabilizers or colorants.

POLYMER TYPES	EXAMPLES OF APPLICATIONS	SYMBOLS
Polyethylene Terephthalate (PET)	Fizzy drink and water bottles. Salad trays.	 PET
High Density Polyethylene (HDPE)	Milk bottles, bleach, cleaners and most shampoo bottles.	 HDPE
Polyvinyl Chloride (PVC)	Pipes, fittings, window and door frames (rigid PVC). Thermal insulation (PVC foam) and automotive parts.	 PVC
Low Density Polyethylene (LDPE)	Carrier bags, bin liners and packaging films.	 LDPE
Polypropylene (PP)	Margarine tubs, microwaveable meal trays, also produced as fibres and filaments for carpets, wall coverings and vehicle upholstery.	 PP
Polystyrene (PS)	Yoghurt pots, foam hamburger boxes, plastic cutlery, protective packaging for electronic goods and toys. Insulating material in the building and construction industry.	 PS
Unallocated references	Any other plastics that do not fall into any of the above categories - for example polycarbonate which is often used in glazing for the aircraft industry.	 O

- Most plastics are non-biodegradable and they might take a long time to decompose
- Plastic materials clog waterways, oceans, seas, lakes etc.
- 1 in 3 species of marine mammals have been found entangled in marine litter.
- Eating food out of plastic containers may cause cancer.
- Many animals eat plastic materials and die
- Few additives such as phthalates etc. which are added in plastics to prevent its structure may cause serious hormonal imbalance in males and females.

What is recycling of plastics?

- Plastic recycling has been described as the process of recovering scrap or waste plastics and reprocessing the material into useful products
- The two methods of recycling of plastics are
 - **Traditional Recycling** - The traditional recycling method involves melting plastics and processing them into new plastic products
 - **Advanced Recycling** - Advanced recycling is a process through which the effect of chemicals breaks down plastic material.
 - This method consists of three other techniques. These techniques include pyrolysis, chemical recycling, and gasification

What are the efforts taken by India to mitigate plastics pollution?

- Since July 1, 2022, India has banned the manufacture, import, stocking, distribution, sale, and use of single-use plastic items with low utility and high littering potential.
- **Plastic Waste Management Amendment Rules, 2021** - prohibits identified single use plastic items by 2022
- Thickness of plastic carry bags increased from 50 to 75 microns from 2021 and to 120 microns with effect from the 2022
- **Plastic Waste Management Amendment Rules, 2022**- The guidelines provide a framework to Strengthen the circular economy of plastic packaging waste
- Promote the development of new alternatives to plastic packaging
- Provide the steps for moving towards sustainable plastic packaging by businesses

What is the way forward?

- To create a viable market for plastics other than
- To use eco-friendly products like bamboo, jute, coconut etc. to replace plastics
- Use of circular model economy

Segregation

- Unsegregated plastic waste being ended up in landfills and water systems.
- Lack of segregation of plastic waste at a local community level.
- Segregation of plastic at household level has remained largely unsuccessful.

No market

- For plastics recycling for 5 types of plastics except Polyethylene terephthalate, high-density Polyethylene (HDPE).

Virgin plastics

- Being cheaper than recycled plastics

Multi-layered plastics

- The plastics having multilayer are hard for recycling

Lightweight flexible packaging

- This industry is booming but it is non-recyclable.

Reasons for low plastic recycling

The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible.

Quick facts

- Around 85% of plastic packaging worldwide ends up in landfills.
- Plastic production set to triple globally by 2060

- only 9% of annual plastic waste recycled

12.11 Desalination - A solution for water crisis

Why in news?

National Institute of Ocean Technology is about to set up green, self-powered desalination plant in Lakshadweep

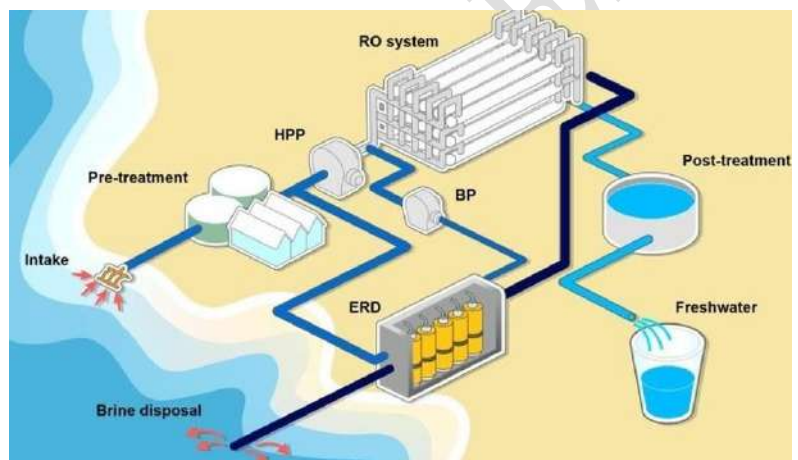
What is desalination?

- Desalination is the process of removing salt from sea water so that it can be used for drinking, or for watering crops.
- Desalination uses thermal distillation or a reverse osmosis membrane to separate salt from the sea.
- Reverse osmosis involves applying external pressure to force solvents through a membrane from a high-solute concentration portion to a low-solute concentration area.

Around 47% of the world's desalinated water is produced in the Middle East and North Africa alone.

What is the status of desalination plants in India?

- The first desalination plant in India is Minjur in Tamil Nadu state in the year 2010.
- The second plant was inaugurated at Nemmeli in Tamil Nadu.
- The second-largest desalination plant situated in Jamnagar of Gujarat
- [National Institute of Ocean Technology](#) to set up green, self-powered desalination plant in Lakshadweep.



What is Low Temperature Thermal Desalination (LTTD)?

- The [LTTD](#) is a process under which the warm surface seawater is flash evaporated at low pressure and the vapour is condensed with cold deep seawater.

What are the advantages of desalination?

- The cost of desalination plants have decreased tremendously
- The desalination plants could ensure water security throughout the year.
- Use of solar energy in desalination plants can mitigate climate change.
- The quality of the water is not compromised
- The source is unlimited
- Helps preserve current freshwater supplies

(SDG 6) -
Clean water
and sanitation
for all.

What are the disadvantages of desalination?

- Emits more greenhouse gases
- High-salinity brine effluents affects the marine ecosystem
- May lead to hypoxia
- Exacerbate climate change if renewable energy is not used as source of power
- Chemical compounds involved in pre-treatment process can be toxic to marine organisms

What is the need of the hour?

- To use *renewable energy* to power desalination plants
- Safe Disposal of hypersaline wastewater or brine away from the marine organisms

Quick facts

- About 2.2 billion people in the world are deprived of access to safe water.
- Nearly three out of four natural disasters are linked to water, and a quarter of the planet lives without safely managed water services or clean drinking water.
- The World Water Day (WWD) has been observed on March 22 every year since 1993
- While around 70% of Earth's surface is covered with water, less than 1% per cent is actually drinkable.

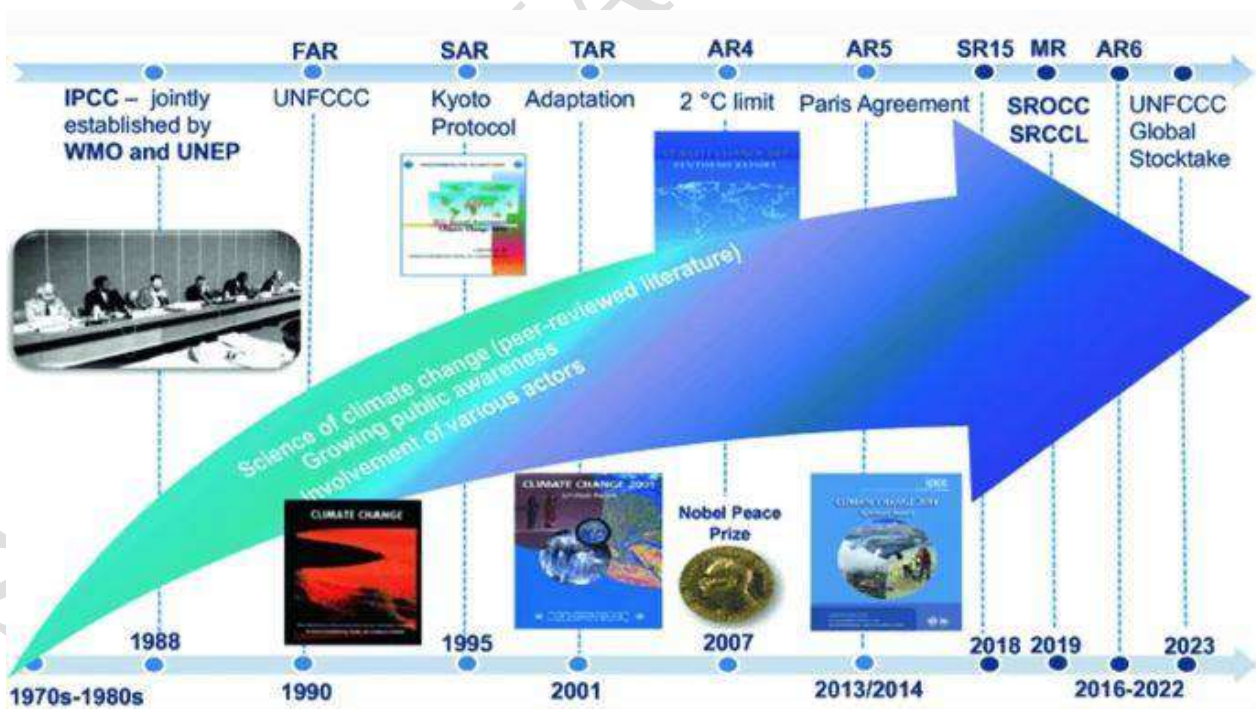
12.12 IPCC Synthesis Report

Why in news?

Highlighting the need for urgent climate action, the Intergovernmental Panel on Climate Change (IPCC) released its Synthesis Report for the Sixth Assessment Cycle in Interlaken, Switzerland.

What is the IPCC?

- The Intergovernmental Panel on Climate Change (IPCC) is the *United Nations body* for assessing the science related to climate change.
- The IPCC does not undertake scientific assessments but only evaluates the state of scientific evidence on various aspects of climate change.
- **Establishment** - It was created in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP).
- **Objective** - The objective of the IPCC is to provide governments at all levels with scientific information that they can use to develop climate policies.
- **IPCC reports** - They are also a key input into international climate change negotiations.
- **Members** - The IPCC is an organization of governments that are members of the United Nations or WMO.
- The IPCC currently has 195 members.



What is the IPCC synthesis report?

- The Synthesis Report is the final part of the IPCC's Sixth Assessment Report (AR6).
- It is fully based on the reports of the *three Working Groups of the IPCC plus the three Special Reports* (Global Warming of 1.5°C, Climate Change and Land, and on the Ocean and the Cryosphere in a Changing Climate).
- **3 Working Groups (WGs)** -

- WG I evaluated the physical science basis of climate change, - WG II evaluated the impacts, adaptation, and vulnerability, and - WG III evaluated the mitigation	Reduce greenhouse gases	The report emphasised the need to reduce greenhouse gas emissions and adapt to effective and equitable action for a liveable sustainable future for all.
This is the final report of the sixth assessment cycle of the UN panel.	Paris Agreement	- The report highlights the urgency to limit rising global temperatures by 1.5° C from pre-industrial levels, set by the Paris Agreement. - While the rate of emissions growth has slowed in the past decade, humanity is estimated to be on a 2.8° C (2.1°-3.4° C range) trajectory by 2100.
Other IPCC reports .	Carbon	- The amount of carbon that the world can cumulatively emit before reaching key temperature limits, i.e., the world's 'carbon budget', is far lower for the 1.5° C than the 2° C target. - The IPCC report points out that humanity had already consumed 4/5th of its total carbon budget for 1.5° C by 2019, with developed economies consuming the lion's share.
What is the key message from the report? Climate resilient - Urgently adopt to climate resilient development. Net zero emissions - While a climate-resilient development pathway is the journey, the destination is net zero emissions at the global level. - If sustained, net-zero GHG emissions will result in a gradual decline in global temperatures.	Climate adaption	Second, the recognition of greater risks at lower temperatures points to the necessity of early climate adaptation.
What are the implications for India? Extreme weather events - The most significant implications of the report for India is the increased frequency and intensity of extreme weather events. Vulnerable population - With a large vulnerable population, India needs to prioritise grants and policies that focusses on adapting to the effects of climate change. Loss of biodiversity - India's priority should be to minimise loss and damage in terms of lives, livelihood and biodiversity, and accelerate equitable action mitigation and adaptation.	Increase finance	- Governments & policymakers should increase finance to climate investments. - They should expand the clean energy infrastructure, reduce nitrogen pollution from agriculture, and curtail food waste.

Findings of the report

What is the way ahead?

- The IPCC report offers a blueprint for sustainable development, while presenting an account of present and future damages to ecosystems and the most vulnerable amongst us.
- Access to clean energy, improving air quality, boosting healthcare through technology, and delivering equity are recommended goals to help adapt to climate change. It is now up to governments and people of the world to act.

Quick Facts
Climate justice entails ensuring representation, inclusion, and protection of the rights of those most vulnerable to the effects of climate change.
Carbon budgets measure how much CO ₂ is produced by industry, homes and all other parts of the economy to calculate by how much emissions must be cut in the future.
Climate adaptation means taking action to prepare for and adjust to both the current and projected impacts of climate change.
Climate finance is a multifaceted concept, which generally refers to finance for activities aiming to mitigate or adapt to the impacts of climate change.
Climate resilient development model integrates both adaptation and mitigation to advance sustainable development for all.

12.13 Wildlife Protection Act (WPA), 1972

Why in news?

Recently a man booked under the Wildlife Protection Act 1972 for “illegally” keeping and nursing an injured Sarus crane (Grus Antigone).

What is Sarus crane?

- The Sarus crane is a large non migratory crane found in parts of the Indian subcontinent, Southeast Asia and Australia.
- Sarus crane is also found in wetlands.
- Sarus crane is the state bird of Uttar Pradesh.
- Sarus crane is the world’s tallest flying bird.

Sarus Crane

- **IUCN Red List** - Vulnerable
- **CITES** - Appendix I
- **WPA, 1972** - Schedule IV
- **Population** - 15,000-20,000 in India

What is the Wildlife Protection Act, 1972?

- **Aim** - It aims to conserve protected species in 2 ways
 - By prohibiting hunting
 - By protecting habitat through the creation and regulation of sanctuaries, national parks, reserves, etc.
- **Hunting** – It includes not just the act of killing or poisoning a wild or captive animal, but even an attempt to do so.
- Even injuring or destroying any part of the animal or its eggs or nests is an offence punishable under the Act.
- List includes capturing, coursing, snaring, trapping, driving or baiting any wild or captive animal.
- **Captive animal** -Any animal specified in Schedule I-IV which is captured or kept or bred in captivity.
- The Act prohibits capturing or hunting any species of animals listed under Schedules I-IV.

Schedules in WPA	Provisions	
Schedule I and II	• Provides absolute protection and higher penalties for violations	
	Schedule I	Schedule II
	• Black Buck, • Black-Necked Crane, • Hooded Crane, • Siberian White Crane, • Wild Yak, and • Andaman Wild Pig	• Common Langur • Chameleon • King Cobra
Schedule III and IV	Schedule III & IV	
	• Chital (spotted deer) • Bharal (blue sheep) • Hyena, • Nilgai, • Sambhar (deer), • Sponges	
	• Protected but the penalties are lower	

Schedule V	Animals listed under are legally considered vermin and may be hunted freely
Schedule VI	The specified endemic plants in Schedule VI are prohibited from cultivation and planting.

- Offences** - Under the Act offences are considered as
 - Hunting, unauthorized possession, transport and trade.
 - Offences related to protected areas or habitat destruction.
- Powers of the state government** - This act allows the State government to appoint a **Chief Wildlife Warden** alongside wildlife wardens, honorary wildlife wardens, and other officers and employees.
- The act empowers the State to constitute a **State Board for Wild Life** consisting of
 - The Chief Minister as Chairperson,
 - The Minister in charge of Forests and Wildlife as the Vice Chairperson
 - At least 3 members of the State legislature.
- Penalties** – Any person who contravenes any provision of the Act shall be punished with up to 3 years imprisonment or fine up to Rs. 25,000 rupees or both.

In 42nd Amendment Act, the subject of Forests and Protection of Wild Animals and Birds was transferred from State to Concurrent List.

What is the 2022 Amendment to the WPA?

- Schedules and increasing penalties** – It brings changes in reducing the number of Schedules and increasing penalties.
- CITES** – It seeks to implement the provisions of “Convention on International Trade in Endangered Species of Wild Fauna and Flora” ([CITES](#)).
- Rationalizing schedules** – It seeks to reduce the number of schedules from VI to IV whereby Schedule V for vermin or animals that destroy food crops will be done away with.
- More powers to Center** - It accords greater powers to the Centre concerning the export, import, regulation, prohibition, and trade of plant or animal species, through a designated Management Authority.
- Conservation reserves** - Central government may declare areas adjacent to national parks and sanctuaries as a conservation reserve
- Invasive alien species** - The central government may authorise an officer to seize and dispose the invasive species.

To know about [Wild Life \(Protection\) Amendment Bill 2021](#)

13. SCIENCE & TECHNOLOGY

13.1 Bio Computers

Why in news?

Scientists outlined a plan for a revolutionary area of research called organoid intelligence, which aims to create bio computers which harness the processing power of the brain.

What is the need for this technology?

- Traditionally, researchers have used rat brains to investigate various human neurological disorders.
- There are several differences in structure and function in the cognitive capacities of rodents and humans.

What are bio computers?

- Brain organoids** – They are 3D cultures of brain tissue developed in the lab.
- They are used to study human brain development and test drugs to see how they respond.

A new field called organoid intelligence could be the basis for computers powered by human brain cells.

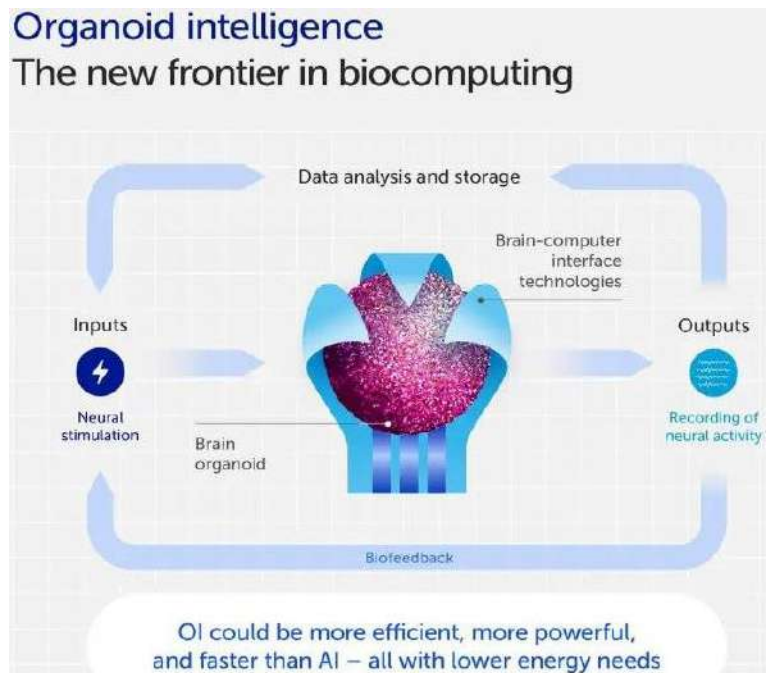
- **Bio computers** – The brain organoids will be combined with modern computing methods to create bio computers.
- **Machine learning** – The organoids will be coupled with machine learning by growing the organoids inside flexible structures affixed with multiple electrodes.
- These structures will be able to record the firing patterns of the neurons and also deliver electrical stimuli, to mimic sensory stimuli and later analysed by machine-learning techniques.

What are the advantages of bio computers?

- **Process complex data** – While human brains are slower than computers in simple arithmetic, bio computers outshine machines at processing complex information.
- **Easily to develop** – Brain organoids can also be developed using stem cells from individuals with neurodegenerative diseases or cognitive disorders.
- **Biological basis** – Comparing the data on brain structure, and signalling between healthy and patient-derived organoids can reveal the biological basis of human cognition, learning, and memory.
- **Decode pathology** – They could also help decode the pathology of devastating neurodevelopmental and degenerative diseases such as Parkinson's disease and microcephaly.

What are the limitations of bio computers?

- **Not sophisticated** – The human brain requires various sensory inputs to develop into the complex organ it is, and brain organoids developed in the lab aren't sophisticated enough.
- The organoids currently also don't have blood circulation, which limits how they can grow.
- **Smaller in size** – Currently, brain organoids have a diameter of less than 1 mm and have fewer than 100,000 cells, which make it roughly three-millionth the size of an actual human brain.
- So scaling up the brain organoid is key to improving its computing capacity, as will incorporating non-neuronal cells involved in biological learning.
- **Microfluidic systems** – Researchers will have to develop microfluidic systems to transport oxygen and nutrients, and remove waste products.
- These hybrid systems will generate very large amounts of data, which researchers will need to store and analyse using Big Data infrastructure.
- **Ethical issues** – There is also a proposal to have an ethics team to parallelly identify, discuss, and analyse ethical issues as they arise in the course of this work.



The Tele-Mental Health Assistance and Nationally Actionable Plan through States (T-MANAS) initiative was announced by the NIMHANS under the NTMHP to provide free round-the-clock tele-mental health services in all parts of the country.

13.2 Deoxyribonucleic Acid (DNA) AND Ribonucleic Acid (RNA)

Why in news?

Increasing variants of the covid-19 virus and their consequences on humans.

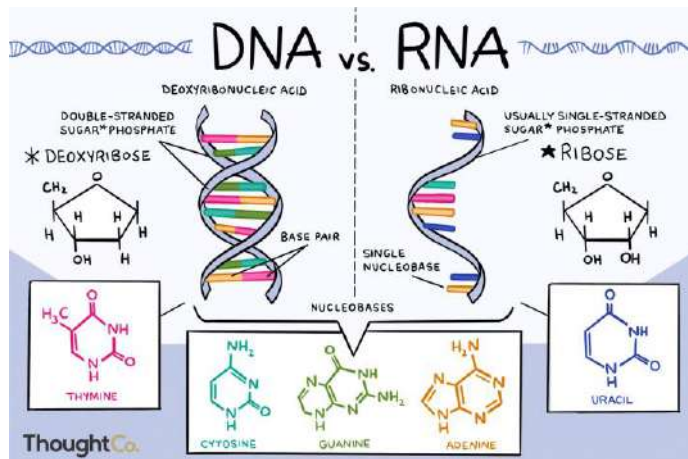
What is DNA?

- **Genetic carrier** -Deoxyribonucleic acid (DNA) is the molecule that carries genetic information for the development and functioning of an organism.
- **Two strands** -DNA is made of two linked strands that wind around each other to resemble a twisted ladder a shape known as a double helix.
 - Each strand has a backbone made of alternating sugar (deoxyribose) and phosphate groups

- The two strands are connected by chemical bonds called bases.
- Four bases** -Adenine (A), cytosine (C), guanine (G) or thymine (T).
- Proofreading** -The enzymes responsible for copying DNA, collectively known as DNA polymerases, possess error-correction property, known as 'proofreading'.

What is RNA?

- Ribonucleic acid (RNA) is a nucleic acid present in all living cells that has structural similarities to DNA
- RNA is most often single-stranded
- An RNA molecule has a backbone made of alternating phosphate groups and the sugar ribose
- Attached to each sugar is one of four bases: adenine (A), uracil (U), cytosine (C) or guanine (G)
- Different types of RNA in cells are messenger RNA (mRNA), ribosomal RNA (rRNA) and transfer RNA (tRNA).
- Some RNAs are involved in regulating gene expression.
- RNA polymerases do not possess the ability to proofread



What is the difference between DNA and RNA viruses?

DNA Virus	RNA Virus
The DNA virus include the members of the pox family (smallpox and chickenpox) and Hepatitis B.	The RNA virus include COVID-19, AIDS, polio, influenza, dengue, chikungunya, Ebola, Zika.
DNA viruses contain DNA as their genetic material	RNA viruses contain RNA as their genetic material
Double-stranded DNA viruses are more common than single-stranded DNA viruses	Single-stranded RNA viruses are more common than double-stranded RNA viruses.
Viral DNA is replicated inside the nucleus of the host cell	Viral RNA is first transcribed and then is replicated in the cytoplasm
DNA viruses are stable due to the lower mutation rate.	RNA viruses are unstable due to the higher mutation rate
DNA viruses shows an accurate replication.	RNA viruses shows an error-prone replication

Why most viruses are RNA based?

- Most viruses are RNA based because
 - They can encode their replication machinery
 - High mutation rates
 - Error-prone nature of their polymerases
 - Acquire multiple adaptations
 - Can exist in multiple variant forms simultaneously in each host

A *zoonosis* (zoonotic disease) is an infectious disease that is transmitted between species from animals to humans (or from humans to animals).

What are the consequences of RNA viruses?

- Survival advantage** -Few odd variants possesses a survival advantage against a vaccine or a drug.
- Such variants will undergo further natural selection and the virus will continue to proliferate.

- **Short generation time** - In a very short period after infection the host's virus population becomes enormous.
- **Affects immune system** -High viral output together with the diversity overwhelms the immune system.
- **Zoonosis** –The viruses can jump across species resulting in zoonosis.
- **Spread easily among newer hosts** -Because the high error rate and the short generation time enable the virus to adapt to newer conditions much faster.

14. INTERNAL SECURITY

13.3 Grievances of Paramilitary Forces

Why in news?

Old age pension is not given to paramilitary personnel who died in Pulwama attack.

What is a paramilitary force?

- A semi-militarized force whose organizational structure, tactics, training, subculture, and (often) functions are similar to those of a professional military but which is not included as part of a state's formal armed forces.
- Though paramilitary is not a military force, it is usually like military's light infantry force in terms of training, and organizational structure.

What are the functions of the paramilitary force?

- All the paramilitary forces comes under Ministry of Home Affairs.

Paramilitary Forces	Year	Functions
The Assam Rifles	1835	Assam rifles contribute in maintaining of law and order, countering insurgency.
The Central Industrial Security Forces (CISF)	1969	CISF provides integrated security cover to public sector undertaking.
The Central Reserve Police Force (CRPF)	28th December 1949	CRPF shall be to enable the government to maintain Rule of Law, and Internal Security effectively.
The Indo-Tibetan Border Police (ITBP) Force	24 October 1962	ITBP guards 3,488 km long India-China borders ranging from the Karakoram Pass in Ladakh to Jachep La in Arunachal Pradesh.
National Security Guard	22 September 1986	NSG has been given the specific role to handle all facets of terrorism in any part of the country
Border Security Forces	December 1 1965	To ensure the security of the borders of India and any matter related to it
Sashastra Seema Bal	March 1963	Sole objective of achieving 'Total security preparedness' in the remote border areas for performing a 'stay-behind' role in the event of a war.

- **Other forces** – Special Frontier Force (Cabinet Secretariat) and Indian Coast Guard (Ministry of Defence)

What are the various problems faced by paramilitary forces?

- Poor quality of food
- Shortage of gazetted officers (GOs) and personnel
- The [old pension scheme](#) not being provided to personnel joining service after December 31, 2003
- Lack of training and skills

What are the various measures taken by government of India?

- **Sanrakshika** - the CISF Wives Welfare Association works for the empowerment and betterment of the families of CISF personnel through various activities.
- **Centralized Public Grievance Redress and Monitoring System (CPGRAMS)** - is an online platform available to the citizens 24x7
- To lodge paramilitary personnel grievances to the public authorities on any subject related to service delivery.
- **Agni veers** - To address the shortage of personnel Six para forces may recruit 2,184 ex-Agni veers every year.

What is the need of the hour?

- The government must listen to the public opinion relating to old age pension.
- Paramilitary forces needed to be treated in par with armed forces.
- The morale of these paramilitary military personnel needs to be kept high.
- The genuine grievances of India's paramilitary forces need to be addressed

PRELIM BITS

15. HISTORY, ART & CULTURE

Sisupalgarh

Land mafias have damaged a portion of the wall of the fortified ancient city of Sisupalgarh.

- Sisupalgarh is a majestic archaeological heritage that has survived over 2,600 years.
- It is the only fortified site in India having 8 gateways.
- Sisupalgarh is located on the outskirts of Bhubaneswar.
- **History** - Sisupalgarh is believed to have been built around the 7th to 6th century BCE.
- It served as the capital of the Kalinga kingdom.
- It was also an important centre of trade and commerce during ancient times.
- **Excavation** - The excavation of the Sisupalgarh site was first taken up in 1948.
- Sisupalgarh, Badadhanpu Lingipur, Raghunathpur and Mahabhoisan, was declared a Centrally Protected Monument in 1950.
- **Findings** - The urban centre it was surrounded by a moat.
- The water management system of the city was unique.
- King Kharavela fortified the city in the 4th to 3rd century BCE.
- Sisupalgarh is one of very few historical references of the present capital city of Bhubaneswar.

Chhatrapati Sambhaji Nagar

Aurangabad in Maharashtra recently rechristened Chhatrapati Sambhaji Nagar.

- Aurangabad's history incorporates the Sultanate, Mughals and the Marathas, and goes back further in time.
- **Ajanta-Ellora** - The famous Ajanta-Ellora caves is in Aurangabad.
- Ajanta - 30 rock-cut Buddhist monuments from 2nd century BC.
- Ellora - The largest rock-cut Hindu temple and its hundred caves dating back to the Rashtrakuta and Yadava dynasties.
- The Ajanta-Ellora caves are UNESCO World Heritage Sites.

- **Sultanate** - Mohammed Bin Tughlaq, a Sultan, decided to shift his capital to safer Daulatabad or Deogir but failed to do so.
- The fort in Daulatabad was the capital of the Yadava dynasty till the 14th century, and later became a part of the Ahmednagar Sultanate.
- **Mughals** - The tomb of the Mughal emperor Aurangzeb lies in Aurangabad.
- Aurangzeb's wife Dilras Banu Begam's burial mausoleum, known as 'Bibi ka Maqbara' also lies here.
- It was built by Aurangzeb and known as 'Taj of Deccan'.
- **Marathas** - Aurangabad was rechristened after Sambhaji.
- Sambhaji was Maratha ruler Chhatrapati Shivaji's son.
- The city also hosts the well-known Shivaji Museum.

Great Pyramid of Giza

A hidden corridor has been unearthed by scientists close to the main entrance of the 4,500-year-old Great Pyramid of Giza.

- The hidden corridor was roughly 2m wide and 9m long.
- The discovery was made in 2016 using a non-invasive technique called cosmic-ray muon radiography.
- The Great Pyramid of Giza is the largest of the 3 pyramids in Giza.
- It stands roughly 147 m above the Giza plateau.
- It was built 4,500 years ago during the reign of Khufu.
- Khufu is often considered the greatest pharaoh of Egypt's old kingdom.
- The pyramid is also known as Khufu or Cheops pyramid.
- It is estimated that the pyramid was built using 2.5 million stone blocks, each weighing between 2.5 and 15 tonnes.
- There are 2 distinct tunnel systems inside the Great Pyramid –
 1. The Descending Passage (described by Greeks like Herodotus) and
 2. The Ascending Passage (opened by the Arabs in the 9th century).
- **Muography** - Muon tomography or muography uses muons to generate three-dimensional images of such large structures.
- Muography is conceptually similar to X-ray but capable of scanning much larger and wider structures, owing to the penetration power of muons.
- Muon tomography was first used in the 1960s and recently found widespread utilisation especially in archaeology.
- **Applications** - Examining archaeological sites, customs security, internal imaging of volcanoes.
- **Muon** - Muons are subatomic particles raining from space.
- These are high-energy particles, naturally produced and ubiquitous.
- They are created when the particles in Earth's atmosphere collide with cosmic rays.

Tibetan Buddhism

The Dalai Lama has named a US-born Mongolian boy as the 10th Khalkha Jetsun Dhampa, the head of the Janang tradition of Tibetan Buddhism.

- Buddhism, originated in India, became the predominant religion in Tibet by the 9th century AD.
- It evolved from the Mahayana and Vajrayana traditions of Buddhism, incorporating many tantric and shamanic practices of both post-Gupta period Buddhism in India.

DID YOU KNOW?



The 9th Khalkha Jetsun Dhampa died in 2012 at Ulaanbaatar, Mongolia. Since then, there had been a wait for his reincarnation.

- Tibetan Buddhism also incorporates from the Bon religion which was spread across Tibet before Buddhism's arrival.
- Tibetan Buddhism has 4 major schools:
 1. Nyingma (8th century)
 2. Kagyu (11th century)
 3. Sakya (1073)
 4. Gelug (1409)
- The Janang school (12th century) is one of the smaller schools that grew as an offshoot of the Sakya school.
- **Gelug School** - Since 1640, the Gelug School has been the predominant school of Tibetan Buddhism.
- The Dalai Lama belongs to Gelug School.
- **Reincarnation** - The Dalai Lama is the foremost spiritual and temporal authority of Tibet.
- The 5th grand lama of the school, Ngawang Lobsang Gyatso, was first conferred the title of *Dalai Lama* ('Dalai' means 'ocean' in Mongol).
- He instituted the tradition of succession through reincarnation in the Gelug School.
- He himself claimed to be the reincarnation of Avalokiteshvara (an important Bodhisattva of Mahayana sect).
- According to Tibetan Buddhist tradition, the spirit of a deceased lama is reborn in a child.
- Several procedures are followed to recognise **Tulkus** (recognised reincarnations).
- Over the past 70 years of Chinese occupation, he has been living in exile in Dharamshala, India.

Pushpagiri Kshetram

13th-century Hindu temple ruins have been recently unearthed at Pushpagiri Kshetram in Kadapa district.

- The Pushpagiri Kshetram hillock is also known as Pushpachala.
- The hillock is famous for the chain of temples dedicated to the pantheon of Hindu gods and has over a hundred small and big temples in its vicinity.
- Chennakesava, Umamaheswara, Rudrapada, Vishnupada, Trikooteswara, Vaidyanatha, Subrahmanya, Vighneswara and Durga Devi temples are found here.
- The **Penna River** flows in the southwest of the hills.
- Pushpagiri is referred to as Hari-Hara Kshetra, as there are a number of temples dedicated to both Shiva and Vishnu.
- **Temple ruins** - The architectural features of the ruins reveal a style which is contemporary to a temple at Vallur.
- The Vallur temple was built by the Kayastha rulers in the 13th Century AD.
- **Kayasthas** - The Kayasthas were subordinates to the rulers of the Kakatiya dynasty.
- They ruled the region with Vallur as the capital.

Mata Sharda Devi Temple

Union Home Minister and Minister of Cooperation e-inaugurated Maa Sharda Devi Temple at Kupwara, Jammu and Kashmir.

- Sharda Peeth and Sharda Mata Devi temple is a revered site for the Hindu community.
- The temple is one of the 18 Maha Shakti Peethas and is considered to be the abode of Hindu Goddess Saraswati.
- It is located in Neelum Valley in Pakistan Occupied Kashmir (PoK) across Teetwal village in Kupwara district of Jammu and Kashmir, along the Line of Control (LoC).
- The Maa Sharda's temple was reconstructed as the temple has been out of reach since partition.
- Originally there was no idol of the Goddess Sharda in the temple, but there was only a stone plinth.
- The reconstructed temple has the idol of Sharda Maa which was donated by the Sringeri Math.

- It is an important step in the direction of discovery of Sharda-civilisation and promotion of Sharda-script.
- Sharda Peeth had been a historical centre of India's cultural, religious, and educational heritage.
- It was a centre of learning known as Sharda Peeth or Sarvajnanpeetha.
- The Government of India is working in direction to start Sharda Peeth yatra across Line of Control (LOC).
- **Sharda-script** - Sharda is the original script of Kashmir.
- It evolved from the Western branch of Brahmi nearly 1200 years ago.
- At this time the language of Kashmir was developing into Kashmiri, with its peculiar intonations, variations and sounds and the script became unfit for Sanskrit.
- But almost all the ancient Sanskrit literature of Kashmir is written in this script.
- **Similar pilgrim site** - The [Kartarpur corridor](#), inaugurated in 2019, links 2 important Sikh shrines and allows pilgrims to travel visa-free.
- It links Dera Baba Nanak in Gurdaspur district of Punjab and Gurudwara Darbar Sahib in Kartarpur, Pakistan.

Gorata Martyr Memorial

The Union Home Minister inaugurates Gorata Martyr Memorial and hoists the 103 feet high tricolor at Gorata Maidan in Bidar, Karnataka.

- The Union Home Minister hoisted a 103-feet-high Tricolour and inaugurated the Gorata Shaheed Smarak and memorial of Sardar Vallabhbhai Patel at Gorata ground.
- Sardar Vallabhbhai Patel played a key role in Hyderabad liberation.
- The Hyderabad state was liberated from Nizam's rule on September 17, 1948.
- **Gorata Massacre** - Gorata village in Bidar district of Karnataka was then a part of the Nizam-ruled Hyderabad State.
- The Hyderabad rulers opposed the erstwhile princely state's unification with India after India's independence.
- Razakar commander Shamshuddin had attacked Gorata village where the locals had hoisted a 2.5-ft tall National Flag.
- The villagers had retaliated and killed Shamshuddin.
- Following this, on May 9, 1948 at Gorata village more than 200 people have been massacred by the Razakars of Nizam.

Humayun (1530-1540, 1555-1556)

Historian Ebba Koch's book 'The Planetary King: Humayun Padshah, Inventor and Visionary on the Mughal Throne' was launched in New Delhi on Humayun's birth anniversary.

- Nasiruddin Humayun (1530-1540, 1555-1556) is the second Mughal padshah.
- He was the successor of Babur, the founder of the Mughal dynasty and father of Akbar.
- He lost to his rival Sher Shah Suri in Battle of Chausa (1539) and Battle of Kanauj (1540), forcing him to flee to Iran.
- In Iran Humayun received help from the Safavid Shah and regained his throne in Delhi in 1555.
- A year later he died in an accident.
- **Accounts** - His biography is *Qanun-i Humayuni* was written by historian *Khwandamir*, it is also known as *Humayun Nama of Khwandamir*.
- **Humayun-Nama** is an account of his life written by his sister *Gulbadan Begam* during Akbar's reign.
- Shah Jahan's court poet Abu Talib Kalim Kashani wrote a poem on Humayun's tomb.
- **Tomb** - Akbar erected Humayun's tomb in Delhi. It is near the Purana Qila, the palace fortress, and other Mughal buildings.
- **Interests** - Humayun had immense knowledge and interest in astronomy and astrology.

- Humayun himself wrote scientific treatises including ‘an introduction to the science of astronomy and some other unusual matters’.
- Humayun even planned to construct an observatory in India.

Komaram Bheem and Alluri Sitharama Raju

The Telugu movie ‘RRR’ was inspired by the lives of Indian freedom fighters Alluri Sitharama Raju and Komaram Bheem.

- Both Alluri Sitharama Raju and Komaram Bheem were 20th-century revolutionaries who led tribal people in present-day Andhra Pradesh against the British and the Nizams.

Alluri Sitharama Raju

- Raju is believed to have been born on 04 July 1897, in a village called Mogallu near Bhimavaram in Andhra Pradesh.
- By the age of 18, he became a sanyasi renouncing all worldly pleasures and mingled with the local tribal community.
- These tribes followed the **‘Podu’ system** of cultivation, whereby every year some amounts of forest tracts were cleared for cultivation.
- The Madras Forest Act of 1882 banned the collection of minor forest produce and tribal people were forced into labour by the colonial government.
- It restricted the free movement of the tribal communities and prohibiting them from engaging in Podu agricultural system.
- This oppressive order was the beginning of the tribal revolt, also known as the **Manyam Rebellion**.
- In August 1922, he launched the **Rampa Rebellion** against the British.
- He used guerrilla warfare along with his army of tribal people to fight against the British.
- However, on 07 May 1924, he was treacherously trapped, tied to a tree, and shot dead.
- He was honoured for his valour and fiery spirit with the title, “Manyam Veerudu” (Hero of the Jungle).
- On his 125th birth anniversary our Prime Minister unveiled a 30-ft bronze statue of him at Bhimavaram, in the West Godavari district.

Komaram Bheem

- Komaram Bheem was born on October 22, 1901, at Sankepally village in Asifabad.
- He hailed from the **Gond tribal** community.
- Bheem’s family migrated to Sardapur village in Kerimeri mandal after his father’s death.
- Nizam’s government used to collect tax in the name of ‘Bambram’ and Dupapetti for grazing cattle and collecting firewood for cooking.
- He led a rebellion against the Nizams of Hyderabad opposing the taxes.
- The slogan **‘Jal, Jangal, Jameen’** (water, forest, land) was given by Bheem to fight for tribal freedom and rights and oppose the taxes.
- Komaram Bheem died in the battle against the Nizam’s army in Jodeghat forest.
- Asifabad district has been renamed as ‘Komaram Bheem District’ since 2016.

Channar Revolt

The bicentenary celebration of one of the earliest recorded anti-caste assertions in southern India was held in Nagercoil with the attendance of Chief Ministers of Kerala and Tamil Nadu.

- The anti-caste revolt fought in 1823 in the southern parts of Travancore Kingdom is known as
 1. ‘Marumarakkal Samaram’ and ‘Channar Revolt’ in Kerala.
 2. ‘Thol Seelai Porattam’ in Tamil Nadu.
- The revolt is a militant public action fought with women from the Nadar caste, an OBC community in the forefront.

- Their demand was that they be allowed to cloth the upper part of their body, a choice then limited to upper caste women.
- Hence the Channar revolt is also known as '**the Upper Cloth Revolt**'.
- The agitation spread across the southern talukas of the then Travancore kingdom.
- The Hindu upper castes, particularly the Nair community that dominated the administration opposed the demand.
- A royal proclamation acceding to the demand was made in 1859.

Other anti-caste movements in the region

- The Vaikom Satyagraha (1924-1925) was held to allow all castes access to roads that went past the Vaikom Shiva temple.
- Vaikom Satyagraha saw the participation of Hindu upper castes in large numbers.
- A savarna march was organised from Vaikom to Thiruvananthapuram to press the demand of the satyagrahis.
- Sree Narayana Guru (1854-1928), fought against the caste system for social equality.
- His message was: '*Man is of one kind, one faith and one God*'.
- Vaikunta Swami, born in a Nadar family, started a radical spiritual movement that had equality at its core.
- Influenced by the Tamil Siddha tradition, Vaikunta Swami challenged the custodians of caste and the religious sphere it maintained and questioned all sets of authority.
- The Guruvayur temple entry movement in 1931 allowed entry to socially backward Hindus.

Siniyah Island

Archaeologists have found the oldest pearling town in the Persian Gulf on an island off one of the northern sheikhdoms of the UAE.

- The pearling town sits on Siniyah Island, whose name means 'flashing lights'.
- Siniyah Island shields the Khor al-Beida marshlands and located north of Umm al-Quwain.
- Umm al-Quwain is the least-populated emirate in the UAE.
- **Period** - The pearling town predates the rise of Islam across the Arabian Peninsula and dates back to the late 6th century.
- The archaeologists already discovered an ancient Christian monastery dating back as many as 1,400 years in the island.
- The town sits directly south of that monastery on one of the curling fingers of the island and stretches across some 12 hectares.
- **Findings** - Archaeologists found a variety of homes made of beach rock and lime mortar, ranging from cramped quarters to more sprawling homes with courtyards, suggesting a social stratification.
- In the homes, loose pearls and diving weights are also discovered.
- The site also bears signs of year-round habitation, unlike other pearling operations run in seasonal spots in the region.
- **Fall** - The pearling industry rapidly collapsed after World War I with the introduction of artificial pearls.
- The discarded oyster shells from the pearling industry is found in a dumpsite in the island.

Assamese gamosa

The 'hybrid' gamosa was used to felicitate guests in a function sparked protests across Assam.

- The Assamese gamosa and Bengali gamchha were cut in half and sewn together triggered rows in Assam claiming that a symbol of Assamese identity had been insulted.
- The 'gamosa or gamocha' is a handwoven rectangular cotton piece of cloth with red borders and different designs and motifs.

- It is traditionally offered to elders and guests as a mark of respect and honour by Assamese people.
- It is an integral part of all socio-religious ceremonies in the state and is considered as an Assamese identity and pride.
- A 'gamosa' literally means a towel and is commonly used in Assamese households for day-to-day affairs.
- For specific purposes, it is also made of expensive materials like traditional Assamese 'Pat' silk and in different colours as well.
- Gamosa is also known as phulam gamosa; a 'gamosa' meant for exchange during 'Bihu' festival is known as '**Bihuwan**'.
- Gamosa, a unique scarf found only in Assam, also received Geographic Indication (GI) tag.



16. GEOGRAPHY

Ornamental fish aquaculture and Agatti Island

Community-based ornamental fish aquaculture, using local resources, is expected to help women in the Lakshadweep islands.

- Women in the islands have limited resources to generate income, mostly in the form of coconut and tuna fish.
- To expand the activity and enhance the income of women, community-based breeding of marine ornamentals is done.
- **Aquaculture** - It is a first-of-its-kind experiment in community-based breeding and sale of ornamental fish, including shrimps.
- In addition to the 2 species of ornamental shrimps, captive-raised clownfish seeds were also supplied to the groups for further rearing.
- Islanders mostly women, were chosen for intensive training and have formed them into groups for ornamental fish aquaculture.

Agatti Island

- Agatti, a 5.6 km long island in Lakshadweep is in the Laccadive group.
- Agatti Island is the gateway to Lakshadweep.
- It is a small chain of islands that lies about 459 km off Cochin from the mainland and the nearest island is Bangaram.

McMahon Line

The United States recognises the McMahon Line as the international boundary between China and India in Arunachal Pradesh.

- The bipartisan resolution introduced in the upper chamber of Congress reaffirms that Arunachal Pradesh is an integral part of India.
- **McMahon Line** - The McMahon Line serves as the *de facto* boundary between China and India in the Eastern Sector.
- It specifically represents the boundary between Arunachal Pradesh and Tibet, from Bhutan in the west to Myanmar in the east.
- China has historically disputed the boundary and claims the state of Arunachal Pradesh as part of the Tibetan Autonomous Region (TAR).



Line of Actual Control

- The LAC separates Indian-controlled territory from Chinese-controlled territory.
- It is divided into 3 sectors:
 - Eastern Sector (Arunachal Pradesh and Sikkim)
 - Middle Sector (Uttarakhand and Himachal Pradesh)
 - Western Sector (Ladakh)

‘Zangnan’ and refers to ‘South Tibet’.

- **History of McMahon Line** - It is named after Sir Henry McMahon, foreign secretary of British India, who drew the line.
- McMahon line is an 890-km border drew between British India and Tibet.
- It was drawn at the **1914 Simla Convention** between the Great Britain, China, and Tibet.
- The border was drawn largely along the crest of the Himalayas, following the ‘highest watershed principle’.
- The People’s Republic of China occupied Tibet in the 1950s, never recognized the McMahon Line.
- Further China claims approximately 90,000 sq. km of territory in Arunachal Pradesh of India as its own.
- The McMahon Line is in alignment with the Line of Actual Control (LAC) in the Eastern Sector.

Cyclone Freddy

Cyclone Freddy dissipated over Malawi in March 2023 after a record-breaking 37-day stint over the southern Indian Ocean and Africa.

- **Traverse Path** - Cyclone Freddy first developed off the North Australian coast and tracked across the entire southern Indian Ocean.
- Cyclone Freddy covered a total distance of more than 8,000 km during its lifetime and periodically weakened below the tropical storm status.
- **Landfall** - The cyclone made landfall thrice — once in Madagascar and twice in Mozambique.
- **Records** - The records made by Cyclone Freddy are yet to be validated by WMO.
- Cyclone Freddy is the longest lived [tropical cyclone](#) ever recorded in any of Earth’s oceans.
- It lasted for 37 days and broke the record of 31 days set by Hurricane John in 1994.
- It also broke the record for the highest accumulated cyclone energy (ACE) at 87.01 units, breaking the record of 85.27 units by Hurricane Ioke in 2006.
- Cyclone Freddy is the first tropical cyclone ever to experience 7 phases of rapid intensification (RI) over its lifetime. (previous record - 4 RI phases)



Quick Facts

- **Accumulated Cyclone Energy (ACE)** is the total wind energy generated by a tropical cyclone throughout its lifetime and is calculated as the square of peak wind speed, observed, calculated and added every 6 hours.
- **Rapid Intensification (RI)** is when a tropical cyclone gains wind speeds of more than 55 kilometres per hour in a period of 24 hours.

Mount Merapi

Indonesia’s Merapi volcano spews hot clouds and ash in new eruption and halted tourism.

- Indonesia’s Mount Merapi is one of the world’s most active volcanoes.
- Mount Merapi volcano is located on the border of Central Java and Yogyakarta provinces.
- The 2,968-meter (9,737-foot) mountain is about 30 kilometers (18 miles) from Yogyakarta.
- Mount Merapi is the most active among the 120 active volcanoes in Indonesia.
- Despite being a dangerous volcano, Mount Merapi is a famous tourist destination.
- Indonesia is home to many active volcanoes, due to its position on the “Ring of Fire”, or the Circum-Pacific Belt, which is characterized by active volcanoes and frequent earthquakes.
- Other volcanoes in Indonesia [Mount Semeru](#), Mount Bromo, [Mount Sinabung](#), [Mount Ili Lewotolok](#)



Solomon Islands

China boosts South Pacific influence with a contract to develop a key port in the Solomon Islands.

- The China Civil Engineering Construction Corporation had been chosen to develop the international port in the capital Honiara.
- The company was established by the Chinese government in the 1970s and has played an integral role in the Belt and Road initiative.
- The island have become the unlikely epicentre of a diplomatic tussle between China and the U.S., after it signed a [secret security pact with China](#) in 2022.
- **Solomon Islands** - Solomon Islands is a country in Melanesia in the south-western Pacific Ocean.
- It consists of 6 major islands and over 992 smaller islands.
- It is an archipelago of tropical volcanic islands and coral atolls.
- Solomon Islands achieved independence from the British as a republic in 1978.
- Honiara is the capital of and largest city in Solomon Islands.



Gandhamardan Hill

The Odisha government has declared the Gandhamardan Hill Range in Bargarh and Balangir district as a Biodiversity Heritage Site (BHS).

- A notification issued by the Odisha's Forest, Environment and Climate Change Department declared Gandhamardan hill as '[Biodiversity Heritage Site](#)'.
- The Gandhamardan hill (Gandhamardan Reserve Forest) spreads over nearly 190 sq.km in Bargarh and Balangir districts in Odisha.
- This ecologically fragile ecosystem is rich in floral and faunal diversity is protected under the Odisha Biodiversity Rules - 2012.
- **Significance** - The hill range have a diverse socio-economic, ecological and biological significance for the people of Odisha.
- The hill ecosystem has 500 species of animals and 1,200 species of plants including 300 species of medicinal plants.
- A treasure trove of medicinal plants, the hill system is considered the '[Ayurvedic paradise](#)' of Odisha.
- The hills have 2 historical monuments (hill shrines) which are major pilgrimage sites of Odisha.
 1. Nrusinghanath temple located on the northern slope.
 2. Harishankar temple on the southern side.
- Hiuen Tsang described the hill shrine as a Buddhist heritage site named *Parimalagiri* in his chronicles.
- **Bauxite Mining** - In 1980s, then public sector Bharat Aluminium Company Limited (BALCO) proposed mining of bauxite from Gandhamardan.
- People protested against it between 1983 and 1991 and the project was shelved.



17. POLITY

Whip

The Supreme Court hearing petitions filed due to a split in the Shiv Sena, observed that members of a house are bound by the 'whip'.

- **Ruling of the Petition** - Members of a House are bound by the 'whip', and if any section of MLAs within a political party that is part of a ruling coalition says it does not want to go with the alliance, the MLAs will attract disqualification.

- **Whip** - The term 'whip' is derived from the old British practice of "whipping in" lawmakers to follow the party line.
- The 'office of whip' is not mentioned or defined in the Constitution.
- The 'office of whip' is a **Parliamentary convention**.
- In parliamentary parlance, a whip may refer to both
 - A written order to members of a party in the House to abide by a certain direction, and
 - To a designated official of the party who is authorised to issue such a direction.
- **Position** - In India, all parties can issue whips to their members.
- Parties appoint a senior member from among their House contingents to issue whips.
- This member is called a chief whip, and he/ she is assisted by additional whips.
- **Function** - A whip may require that party members be present in the House for an important vote, or that they vote only in a particular way.
- **Degree of importance of Whip** - Whips can be of varying degrees of seriousness and can be inferred from the number of times an order is underlined.

A one-line whip Underlined once	Usually issued to inform party members of a vote.
	Allows them to abstain in case they decide not to follow the party line.
A two-line whip Underlined Twice	Directs them to be present during the vote.
	Abstention from voting invites more scrutiny from party.
A three-line whip Underlined Thrice	Strongest whip. Employed on important occasions such as the second reading of a Bill or a no-confidence motion.
	Places an obligation on members to toe the party line.

- **Penalty** - The penalty for defying a whip varies from country to country.
- **In India** - Rebelling against a three-line whip can put the membership of the House at risk.
- The anti-defection law allows the Speaker/ Chairperson to disqualify such a member.
- **Exception** - When more than a third of legislators vote against a directive, effectively splitting the party.
- **The United Kingdom** - An MP can lose membership of the party, but can keep their House seat as an Independent.
- **The US** - More freedom to House members. The party whip's role is to gauge and persuade them to vote according to the party line.
- **Related topic** - [The political crisis in Maharashtra](#)

Guillotine Closure

The Lok Sabha passed the demands for grants for ministries without any discussion due to disruptions in Parliamentary procedure.

- The Union budget after prepared is presented in the Parliament and goes through a process before its passage.
- The steps involved are -



- **Closure Motion** is a type of motion moved by a member to cut short the debate on a matter before the House.
- If the motion is approved by the House, the debate is stopped forthwith and the matter is put to vote.
- There are 4 kinds of closure motions. They are:
 1. Simple Closure
 2. Closure by Compartments
 3. Kangaroo Closure
 4. Guillotine Closure
- **Guillotine Closure** is a parliamentary procedure which refers to the passage of a legislation without debate or discussion.
- Once the House is done with these debates, the **Speaker applies** the 'guillotine', and all outstanding demands for grants are put to vote at once.
- This usually happens on the last day earmarked for the discussion on the Budget.
- It is to ensure timely passage of the Finance Bill.
- **Appropriation** - After the implantation of the guillotine during the Budget session, the government formally introduces the Appropriation Bill.
- The Appropriation Bill is passed to authorise the government to withdraw funds from the Consolidated Fund of India for the budgetary expenditure.

Other Types of Closure

- **Simple Closure:** It is one when a member moves that the 'matter has been sufficiently discussed be now put to vote.
- **Closure by Compartments:** In this case, the clauses of a bill or a lengthy resolution are grouped into parts before the commencement of the debate. The debate covers the part as a whole and the entire part is put to vote.
- **Kangaroo Closure:** Under this type, only important clauses are taken up for debate and voting and the intervening clauses are skipped over and taken as passed.

Disqualification of MP

Wayanad MP Rahul Gandhi's membership of Parliament has been cancelled following his conviction in a defamation case.

- The Lok Sabha Secretariat issued a notification stating that 'Rahul stood disqualified from the membership of Lok Sabha from the date of his conviction.
- His disqualification was in terms of the provisions of
 - Article 102(1) (e) of the Constitution of India.
 - Section 8 of the Representation of the People Act, 1951.
- **Article 102** deals with the disqualification of MPs from either house of the Parliament.
 - **Article 102 (1)** of the article lists the reasons why an MP can be disqualified.
 - **Article 102 (1) (e)** if he is so disqualified by or under any law made by Parliament.
- In this case, the law under which he has been disqualified is the Representation of People Act, 1951.

The Representation of the People Act, 1951

- The Act provides for the conduct of election of the Houses of Parliament, the qualifications and disqualifications for membership of those Houses.
- Section 8 of the RP Act, 1951 deals with disqualification of a lawmaker for conviction in certain offences.
- Disqualification is triggered under
 - Section 8(1) - specific offences.

- **Section 8(2)** - offences that deal with hoarding or profiteering, adulteration of food or drugs and for conviction and sentence (at least 6 months) under the Dowry Prohibition Act.
- Congress Leader Rahul Gandhi was held guilty and sentenced to 2 years in jail by a Surat court in a 2019 defamation case, which triggered the Section 8(3) of the RPA, 1951.
- **Section 8(3)** of the RPA, 1951 states that a person convicted of any offence and sentenced to imprisonment for not less than 2 years shall be disqualified from the date of such conviction.
- Further the person shall continue to be disqualified for a further period of 6 years since his release.
- **Reversal** - The disqualification can be reversed if a higher court grants a stay on the conviction or decides the appeal in favour of the convicted lawmaker.

Lily Thomas v Union of India, 2013

- **Immediate Disqualification** - In the landmark judgement, the Supreme Court struck down Section 8(4) of the RPA as unconstitutional.
- **Section 8(4)** of the RPA stated that the disqualification takes effect only after 3 months have elapsed from the date of conviction, within which lawmakers could file an appeal in the High Court.

Anti-defection Law

The Constitution Bench was hearing political dispute in Maharashtra held that Anti-defection law applies even if a faction splits from a party.

- The anti-defection law was added by **52nd Constitutional Amendment** Act as the **Tenth Schedule** in 1985.
- Its purpose was to bring stability to governments by discouraging legislators from switching parties.
- It was a response to the toppling of multiple state governments by party-hopping MLAs after the general elections of 1967.
- The anti-defection law punishes individual MPs/MLAs for leaving one party for another.
- **Deciding Authority** - The Presiding Officers of the Legislature (Speaker, Chairman).
- The decision can be challenged before the higher judiciary.
- The law contemplates two kinds of defection:
 1. by a member voluntarily giving up membership of the party on whose symbol he got elected
 2. by a member violating a direction (**whip**) issued by his party to vote in a particular way or to abstain from voting
- **Split** - If one-thirds of a legislature party leaves it or joins another party, it amounts to a 'split'.
- Originally, in the 10th Schedule a 'split' in a legislature party is an exception to the disqualification rule.
- This was deleted by the Constitution (**91st Amendment**) Act, 2003.
- **Exemption**- The law allows a group of **two-third** MP/MLAs to join (i.e. **merger**) another political party.
- The merger has to take place between 2 parties and after that, two-third of the members, if they agree with the merger, then they are exempted from disqualification.
- **SC observation** - The anti-defection law applies even if a faction splits from a political party and manages to cobble up a majority within the party itself.
- Irrespective of the faction being majority or minority, anti-defection law applies.
- **Related topic** - [The political crisis in Maharashtra](#), [Kihoto Hollohan Judgment](#)

Foreign lawyers in India

The Bar Council of India (BCI) has allowed foreign lawyers and law firms to practise in India and notified in the official gazette.

- The Bar Council of India (BCI) notified the Rules for 'Registration and Regulation of Foreign Lawyers and Foreign Law Firms in India, 2022'.
- The foreign lawyers and firms can now set up offices in India and practice transactional and corporate work on a reciprocal basis.
- **Earlier** - BCI was opposed to allowing foreign law firms in India.

- In 2018, the [Supreme Court upheld previous HC judgments](#) disallowing foreign law firms and lawyers in India.
- **Rules** - A foreign lawyer or law firm is not entitled to practice law in India without registering with the BCI.
- Foreign lawyers and law firms are entitled to register with BCI to practise in India if they are entitled to practise law in their home countries.
- Foreign lawyers will only be allowed to advice on international laws.
- They will not be permitted to appear before any Indian courts and tribunals and cannot practise Indian law.
- Indian lawyers working with foreign law firms will also be subject to the same restriction.
- The reciprocity rule will not be applicable if a foreign lawyer or law firm works on a 'fly in and fly out' basis.

Quick Facts

Reciprocal laws are statutes of one state that give rights and privileges to the citizens of another state if it extends similar privileges to the citizens of the former.

Bar Council of India

- The Bar Council of India (BCI) is a statutory body established under the **Advocates Act, 1961**.
- It regulates legal practice and legal education in India.
- According to the Advocates Act, advocates enrolled with the Bar Council alone are entitled to practise law in India.
- All others, such as a litigant, can appear only with the permission of the court, authority or person before whom the proceedings are pending.

Muslim personal law on Inheritance

A Muslim couple from Kerala recently decided to get their marriage registered under the Special Marriage Act (SMA) to ensure their daughter's inheritance.

- The couple's marriage under Special Marriage Act will enable their daughters to inherit the couple's property under the Indian Succession Act, 1925.
- **Shariat** - Inheritance for Muslims in India is governed by the Muslim Personal Law (Shariat) Application Act, 1937.
- This legislation that codifies Shariat recognises 2 kinds of legal heirs - sharers and residuaries.
 1. **Sharers** - A legal heir who gets a share in the inheritance are 12 categories including Husband, Wife, Daughter, Father, Mother, Paternal Grandfather, Paternal Grandmother, Sisters and Brothers.
 2. **Residuaries** - Residuary heirs can be aunts, uncles, nieces, nephews and other distant relatives.
- The value of their share depends on several scenarios.
- **Daughters** - Daughters cannot inherit more than half of what the sons inherit.
- When a couple has only a daughter or daughters, the daughters can inherit only two-thirds of father's property.
- **Other Options** - The Islamic division of property clauses for relatives comes into force once a person dies.
- There 2 options for transfer of wealth as per their wish.
 1. **Vasiyat** - Under this, 1/3 of the estate can be willed (declared upon death) in favour of anyone and the remaining will be divided as per religious law.
 2. **Virasat** - Under virasat (inheritance), there is the option of *hiba* which allows unrestricted transfer of wealth or property to a person during the lifetime of the donor.
- But *hiba* is like a gift deed which can be made during one's lifetime.
- **To know about** - Right of women to family properties under Hindu Succession Act - [Click here](#).

18. GOVERNMENT INTERVENTIONS & SCHEMES

Smart Cities Mission

Smart Cities Mission approaches the deadline for completing the mission June 2023.

- The Smart Cities Mission was launched by the Prime Minister on June 25, 2015.
- **Ministry** - The mission is an initiative of the Union Housing and Urban Affairs Ministry
- **Objective** - Promote cities that provide core infrastructure, clean and sustainable environment.
- Give a decent quality of life to their citizens through the application of 'smart solutions'.
- **Fund** - The Mission is operated as a Centrally Sponsored Scheme.
- **Cities Chosen** - Cities across the country were asked to submit proposals for projects.
- The Ministry selected 100 cities for the Mission over 5 rounds till 2018.
- **Deadline** - The projects were supposed to be completed within 5 years of the selection of the city.
- Shillong was the last city to be chosen and its deadline was June 2023.
- But in 2021 the Ministry changed the deadline for all cities to June 2023 which was earlier the deadline for Shillong alone.
- **Present Status** - Only around 20 cities are likely to meet the June deadline; the rest will need more time.
- Shillong has completed just one of its 18 proposed projects.
- All 100 cities have also constructed [Integrated Command and Control Centres](#) to monitor all security, emergency and civic services.

herSTART

The newly created platform 'herSTART' aimed at supporting women-led start-ups was recently inaugurated by the President of India.

- 'herSTART' is an initiative of the Gujarat University Start-up and Entrepreneurship Council (GUSEC).
- The platform has been introduced to promote women start-ups and to encourage women entrepreneurs.
- The platform includes a digital platform to provide resources and training modules free of cost to aspiring women entrepreneurs.
- It also provides a digital community for them, and a digital publication to spread their success stories.
- It also includes an accelerator which provides the following facilities to women entrepreneurs.



Lakhpati Didi Initiative

The Ministry of Rural Development has signed a MoU with the Ministry of Ayush to collaborate in making Lakhpati Didis from the SHGs.

- Lakhpati Didis are women with **annual earnings of Rs. 1 lakh** and more.
- The Ministry of Rural Development launched Lakhpati Didi initiative on creating Lakhpati SHG women.
- The initiative aims to enable rural SHG women to earn at least Rs.1 lakh per annum.
- The Ministry provides livelihood support to 25 million rural SHG women in the next 2 years.
- Earlier, Uttarakhand government launched 'Lakhpati Didi Yojana' to make 1.25 lakh women from self-help group 'Lakhpati' by 2025.

- **MoU** - Ministry of Rural Development signs MoU with Ministry of Ayush for skilling of rural youth and empowering women.
- The collaboration will impart training to rural poor youth and women for Ayush healthcare system under DDU-GKY.
- The training is given priority to SHG women to realize an annual income of INR 1 lakh.
- **Training** - The collaboration will train rural poor youth under NSQF compliant courses like Panchakarma Technician, Cupping Therapy Assistant, etc., under DDU-GKY.



Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)

- DDU-GKY is one of the flagship poverty alleviation programs under National Rural Livelihoods Mission (NRLM).
- DDU-GKY was launched on 25th September 2014 by Ministry of Rural Development.
- The scheme is aimed at skilling the poorest of the poor youth between the ages of 15 and 35 years from Rural India.
- The NRLM mission has made successful strides through the *Mahila Kisan Sashaktikaran Pariyojana*, bringing focus on the role of women as farmers.

TN-KET Initiative

Tamil Nadu has pioneered an initiative called TN-KET across the State to reduce the mortality rate among people with tuberculosis.

- The initiative TN-KET (Tamil Nadu *Kasanoi Erappila Thittam* - meaning TB death-free project) began in April 2022 in 2,500-odd public healthcare facilities that diagnosed TB in 30 districts.
- It has achieved significant reduction in the number of early TB deaths (Deaths within 2 months of TB diagnosis).
- Early TB deaths have reduced from more than 600 in April 2022 to less than 350 in December 2022.
- Chennai-based National Institute of Epidemiology (ICMR-NIE) along with the State TB Cell is spearheading TN-KET.
- Preliminary assessment (triaging) of patients based on just 3 conditions instead of 16 parameters of 'differentiated TB care guidelines'.
- **3 conditions** - very severe undernutrition, respiratory insufficiency, and inability to stand without support.
- The triaging was feasible for quick identification at diagnosis and referral for admission in a healthcare facility for comprehensive assessment and further management of the disease.
- The comprehensive assessment is mainly for identifying severe TB illness needing immediate care thus vastly cutting down the delay and increasing the chances of saving lives.
- The State has identified around 150 nodal inpatient care facilities with nearly 900 beds earmarked for people with severely ill with TB.

DID YOU KNOW?

Nearly 70% of all TB deaths among notified TB patients take place in the first two months after diagnosis

Global Shree Anna Conference

Prime Minister inaugurates the Global Millets (Shree Anna) Conference at IARI Campus, PUSA New Delhi.

- A commemorative stamp and commemorative coin were unveiled in this 2-day conference.
- A compendium of Indian millet (Shri Anna) start-ups and a book of millet (Shri Anna) standards were also digitally launched.
- The Indian Institute of Millets Research of ICAR was declared as a Global Centre of Excellence.
- Global Millets Conference is a symbol of India's responsibilities towards the global good.
- Shree Anna is becoming a medium of holistic development in India and is linked with village as well as the poor.
- **AgLive 2023** - 'AgLive 2023: The Millet Challenge' is a Pitch session for Millets based Startups, organised as part of the conference.

- It was aimed at making an impact by increasing interaction amongst millet-based innovators/entrepreneurs, investors, and other stakeholders.

Millets in India

- India is the largest producer of millets. It produced 17.96 million Metric Tonne (MT) of Millets.
- India's export of Millets is 64 million USD in the year 2021-22.
- Major millet-growing states in India are Rajasthan, Maharashtra, Karnataka, Andhra Pradesh and Madhya Pradesh.
- A wide range of millets are produced across India.
- Major Millet grown in India are Pearl Millet, Sorghum and Finger Millet.
- Minor Millets are Proso Millet, Kodo Millet, Little Millet, Foxtail Millet, Browntop Millet, Barnyard Millet, Amaranthus and Buckwheat.

Parvatmala Project

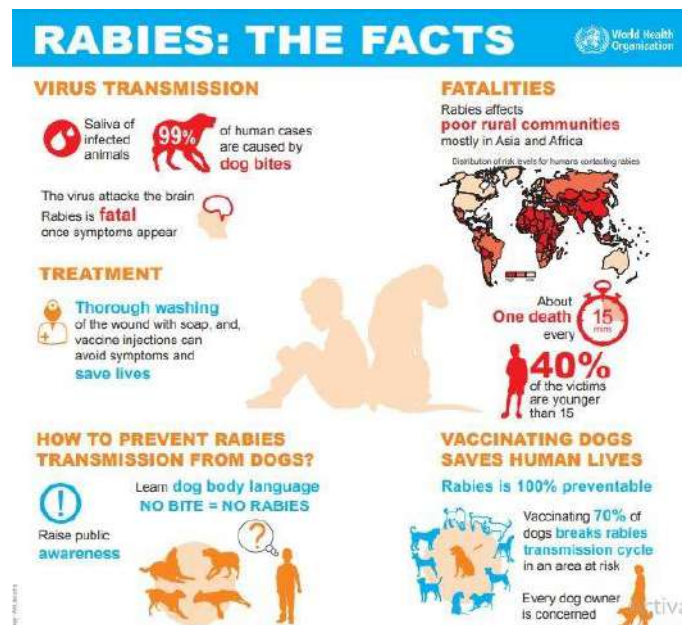
The detailed feasibility studies completed for 8 projects for implementation of Ropeways under Parvatmala program.

- The National Ropeway Development Programme is also known as 'Parvatmala' (Parvatmala means garlanding mountains).
- The project aims to decongest mountainous areas where road and train connectivity cannot be upgraded beyond a limit.
- 30 priority points or stretches will be constructed under phase-I of the project.
- The Parvatmala project was announced in the [2022-23 Union Budget](#).
- Parvatmala will construct ropeways in mountainous terrains of India under the Public Private Partnership (PPP).
- Nodal Ministry** - The Ministry of Road Transport and Highways undertakes the project.
- The ministry will oversee all the affairs related to the ropeway construction, research, and policy-making.
- Implementing Agency** - The National Highways Logistics Management Limited (NHLML) has been mandated by the ministry to implement the project.
- NHLML is a 100% owned SPV of National Highways Authority of India (NHAI).
- NHLML has aimed to complete construction of 8 ropeways in FY 2022-2023.
- Similar Initiatives** - [Sagarmala](#), [Bharatmala](#)

National Rabies Control Programme

The Union Minister of Fisheries, Animal Husbandry and Dairying elaborated about Rabies control in India in a written reply in Rajya Sabha.

- Ministry of Fisheries Animal Husbandry & Dairying and Ministry of Health & Family Welfare jointly launched '[National Action Plan for Dog Mediated Rabies Elimination](#)' (NAPRE) from India by 2030'.
- The Union Government has launched the National Rabies Control Programme (NRCP) for prevention and control of Rabies.
- The Strategies of the National Rabies Control Program are
 - Provision of rabies vaccine & rabies immunoglobulin through national free drug initiatives.



2. Training on appropriate animal bite management, prevention and control of rabies.
 3. Strengthening surveillance of animal bites and rabies deaths reporting.
 4. Creating awareness about rabies prevention.
- **Rabies** - Rabies is a vaccine-preventable zoonotic viral disease.
 - **Transmission** - Dogs are the source of the vast majority of human rabies deaths, contributing up to 99% of all rabies transmissions to humans.
 - **Prevention** - The most cost-effective prevention strategy is vaccinating dogs.

Aravalli Green Wall Project

Union Minister for Environment, Forest and Climate Change launched the Aravalli Green Wall Project, a major green initiative to revive Aravallis.

- The Aravalli Green Wall Project is a major initiative to green the area around the Aravalli Hill Range in 4 states.
- The project covers states of Haryana, Rajasthan, Gujarat and Delhi for roughly 1,400-km long and 5-km wide green belt buffer around the Aravalli mountain range.
- The Aravalli hills landscape span over 6 million hectares of land in these 4 states.
- The project will involve planting native species of trees and shrubs on degraded land.
- It also involves rejuvenating and restoring surface water bodies.
- The project will also focus on agroforestry and pasture development.
- **Benefits** - increase the green cover and biodiversity of the Aravalli and also improve the soil fertility, water availability and climate resilience of the region.
- Aravalli Green Wall will protect NCR of Delhi from sand and dust storms and pollution.
- Generate multiple environmental and socio-economic co-benefits.
- Restore degraded forest, crop and pasture lands.
- Sequester Carbon, Conserve Biodiversity.
- Build Resilience to Climate Change.
- Enhance Water Conservation, Agricultural Production and Farm Incomes in the Degraded most degraded land of India.
- **Aravallis** - Aravallis stand as the only barrier stopping the expansion of desert land towards north-west India.
- Aravallis is under the threat of rampant mining, dumping of waste and encroachments.
- The government of India is trying to revive the Aravallis through various initiatives like single-use plastic ban, water conservation efforts and natural resources protection.



Aravalli Green Wall Project was conceptualised on the lines of Africa's 'Great Green Wall' concept to combat desertification and land degradation from Dakar (Senegal) to Djibouti.

Sukanya Samriddhi Account Scheme

- **'Sukanya Samriddhi Yojana'** is a small deposit scheme for girl child, launched as a part of the *'Beti Bachao-Beti Padhao'* initiative in 2015.
- **'Sukanya Samriddhi Account' (SSA)** can be opened at any time from the birth of a girl child till she attains the age of 10 years.
- The account offers a higher interest rate as well as several tax benefits.
- The account can be opened in any post office or authorised branches of commercial banks.

Interest Calculation of SSA

- The central government reviews the interest rates of small savings schemes like SSA every quarter based on the G-Secs yields of the previous 3 months in the secondary market.
- This is to ensure that the interest rates of small savings schemes are market-linked, as per the recommendations of the **Shyamala Gopinath Committee, 2011**.

- The account requires a minimum deposit of Rs 250 and a maximum of Rs 1.5 lakh in a year.
- **Interest** - The government determines the SSY scheme's interest rate is calculated quarterly and it is compounded annually.
- Currently, the interest rate has been reduced from 8.4% to 7.6%.
- **Interest not payable** - Expiration of scheme's duration or if the girl becomes a Non-resident Indian (NRI) or a non-citizen.
- **Maturity** - After 21 years of opening or, in the event of the marriage of the girl child after she gains the age of 18 years.

Captive Employment Initiative

The Union Minister for Rural Development initiates 'Captive Employment' initiative under Deen Dayal Upadhyaya Kaushalya Yojana (DDU-GKY).

- The Ministry of Rural Development (MoRD) signed a MoU with 19 Captive Employers.
- **Aim** - To train and provide jobs for rural youth under the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY).
- **RTD model** - The Captive Employment Guidelines ensures the RTD (Recruit, Train and Deploy) model.
- The RTD model address the needs of the industry, train accordingly and ensure sustainable placements for rural youth.
- **Captive Employer initiative** - It is a unique initiative designed to create a versatile and demand-driven skill development ecosystem.
- This initiative caters to the needs of industry partners, ensuring long-term employment for underprivileged rural youth.
- **Captive Employers** - It refers to companies or industries that select rural youths, skill them, and deploy them in one of their own establishments, sister-concerns or subsidiaries.
- Any placements that arise from this scheme are called captive placements.
- This provides more hands-on training at the job site itself, as per industry requirements.
- Captive Employers are required to
 1. Offer captive (in-house) placement to all the trained candidates and
 2. Provide captive employment to a minimum of 70% of trained candidates for a period of 6 months.
- Captive employment gives a minimum salary of Rs 10,000 (for less than 6 month course) and Rs 12,000 (for more than 6 month course).

New India Literacy Programme

New India Literacy Programme launched to cover a target of 5.00 crore non-literates in the age group of 15 years and above.

- The scheme aims to cover a target of 5.00 crore non-literates in the age group of 15 years and above.
- The Scheme has 5 components:
 1. Foundational Literacy and Numeracy
 2. Critical Life Skills
 3. Vocational Skills Development
 4. Basic Education
 5. Continuing Education
- The scheme is based on technology and implemented predominantly through online mode.
- **Time Frame** - Implementation during 5 years from the FYs 2022-23 to 2026-27 with financial outlay of Rs.1037.90 crore.
- **Funding** - Centrally Sponsored Scheme

- **Ministry** - Ministry of Education
- **Beneficiary** - All the non-literate above 15 years of age can avail the benefits of the scheme.

19. INTERNATIONAL RELATIONS

BIMSTEC Energy Centre

India hosted the first meeting of the Governing Board of BIMSTEC Energy Centre (BEC) in Bengaluru.

- BIMSTEC Energy Centre (BEC) is one of the 2 centres of [BIMSTEC](#).
- The other being - BIMSTEC Centre on Weather and Climate.
- The establishment of BIMSTEC Energy Centre (BEC) was envisaged during the First BIMSTEC Energy Ministerial Meeting held in New Delhi in 2005.
- **Aim** - To coordinate, facilitate, and strengthen cooperation in the energy sector in the BIMSTEC region by promoting experience sharing and capacity building.
- **Meeting Highlights** - There was active participation from all 7 BIMSTEC countries viz. Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka and Thailand.
- India made a presentation on establishing the BIMSTEC Energy Centre (BEC) in India in the premises of the Central Power Research Institute (CPRI), Bengaluru.
- Considering the current energy scenario in BIMSTEC region, the Meeting recommended to add the additional following areas under the specialized Wings of BEC:
 - a. Cyber Security,
 - b. Green Hydrogen
 - c. Energy Transition
- **Related Topic** - Fifth BIMSTEC Summit - [Part 1](#) and [Part 2](#)

Global Security Initiative

China has put forward the Global Security Initiative at the G20 Foreign Ministers' Meeting (G20FMM).

- China's Foreign Minister Qin Gang took part and spoke at the G20 Foreign Ministers' Meet (G20FMM) event.
- The Chinese Foreign Minister put forward the Global Security Initiative (GSI).
- China also issued the concept paper on Global Security Initiative.
- He also put forward the Global Development Initiative proposed by the Chinese President Xi Jinping to make global development more inclusive, resilient and beneficial for all.
- **G20FMM** - The G20 Foreign Ministers Meeting took place in New Delhi under India's G20 Presidency.

Battle of Bakhmut

Bakhmut is currently in ruins, having been the focal point of Russian assaults and a site of dogged defence by the Ukrainian military.

- Bakhmut is a small mining town in Eastern Ukraine.
- The tiny town with a pre-war population of around 70,000 people.
- Battle of Bakhmut is one of the bloodiest fighting in the [Ukraine-Russia War](#).
- The Russians have surrounded Bakhmut from 3 sides.
- Bakhmut's civilian population has long fled and only charred ruins remains.
- **Russians** - They see Bakhmut as a symbol of their resolve to war.



- **Ukrainians** - They are proud of holding on to the land.
- **Significance** - Bakhmut does not have either militarily important industry nor is it strategically located such that its capture is vital.
- Bakhmut have less to do with military strategy than political strategy.
- **Meat-Grinder** - Battle of Bakhmut is a symbol of the bloody struggle.
- The Battle of Bakhmut has taken on a similar character of Battle of Verdun: A meat-grinder.
- The Battle of Verdun in World War I has been described by historians as a meat-grinder: where many young men succumbed to death in the war while trying to make negligible strategic gains.

Least Developed Country

Bhutan became the seventh nation to graduate from the United Nations' (UN) list of Least Developed Countries (LDC).

- The Least Developed Countries (LDC) are developing countries listed by the UN that exhibit the lowest indicators of socioeconomic development.
- The concept first originated in the late 1960s and was codified under UN resolution 2768 passed in November 1971.
- **Definition** - According to the UN, Least developed countries (LDCs) are low-income countries confronting severe structural impediments to sustainable development.
- They are highly vulnerable to economic and environmental shocks and have low levels of human assets.
- **LDC at present** - Currently, the UN lists 46 countries that qualify as LDCs.
- Of those, 33 are from Africa, nine from Asia, 3 from the Pacific and 1 from the Caribbean.
- **Criteria** - The UN identifies 3 criteria for a country to be classified as an LDC:
 1. Income - Gross National Income (GNI) per capita below the threshold of USD 1,230 over a three-year average.
 2. Human Assets - Perform poorly on a composite human assets index based on indicators including nutrition, health and education.
 3. Economic Vulnerability - Demonstrate economic vulnerability such as being prone to natural disasters and possessing structural economic constraints.
- The criteria are reviewed on a 3-year basis (triennial) by the UN.

DID YOU KNOW?

Botswana is the first country to achieve graduation in 1994. Its strong economic performance driven by its diamond mining industry and investments in education and infrastructure was a major reason.

- **Getting off the LDC list** - To graduate from the LDC list, a country must meet certain criteria in the above 3 areas in the triennial review.

1. A nation must have a GNI per capita of at least USD 1,242 for 2 consecutive triennial reviews in order to meet the income requirement.
2. By using measures like education, health, and nutrition, a nation must show that it has improved its human capital in order to achieve the human assets requirement.
3. A nation also must show that it has improved its ability to withstand external economic shocks in order to pass the economic vulnerability test.

- **Advantages of being an LDC** - LDCs also enjoy duty-free and quota-free (DFQF) access to the markets of developed countries.

- LDCs are also eligible for loans with special terms for development, which include 'Official Development Assistance' (ODA) or 'aid'.

Bhutan

- Bhutan is a mountainous, landlocked country in Asia.
- It is consistently ranked one of the happiest in the world.
- Bhutan was included in the first group of LDCs in 1971.
- It has made remarkable progress on a variety of socio-economic metrics and fulfilled the requirements for graduation in 2015 and in 2018.
- Exporting hydropower to India accounts for 20% of Bhutan's economy.

Doha Political Declaration

The Fifth United Nations Conference on the Least Developed Countries (LDC5) concluded with adoption of the 'Doha Political Declaration'.

- The Doha Programme of Action (DPoA) for the Decade (2022-2031) was agreed upon during the first part of the LDC5 conference at New York in 2022.
- The second part of LDC5 conference held under the theme 'From Potential to Prosperity' at Qatar in March, 2023.
- The declaration adopted in the second part of LDC5 focuses on implementing the DPoA.
- The DPoA is the 10-year plan to put the world's 46 most vulnerable countries back on track to achieving the UN-mandated Sustainable Development Goals (SDG).
- **Focus Area** - DPoA (2022-2031) consisted of 6 key focus areas including →
- **Deliverables** - The 5 key deliverables from the DPoA are - an online university, a graduation support package, a food stock holding solution, an investment support centre and a crisis mitigation and resilience building mechanism.
- They will answer key challenges facing the LDCs, and set the path for a more prosperous, equitable future.

“The Sustainable Development Report 2022 flagged that the LDCs are the worst performers on the progress made towards achieving SDGs”

Vienna Convention on Diplomatic Relations

After vandalism by pro-Khalistan protestors at Indian High Commission in London, The Ministry of External Affairs invoked the Vienna Convention.

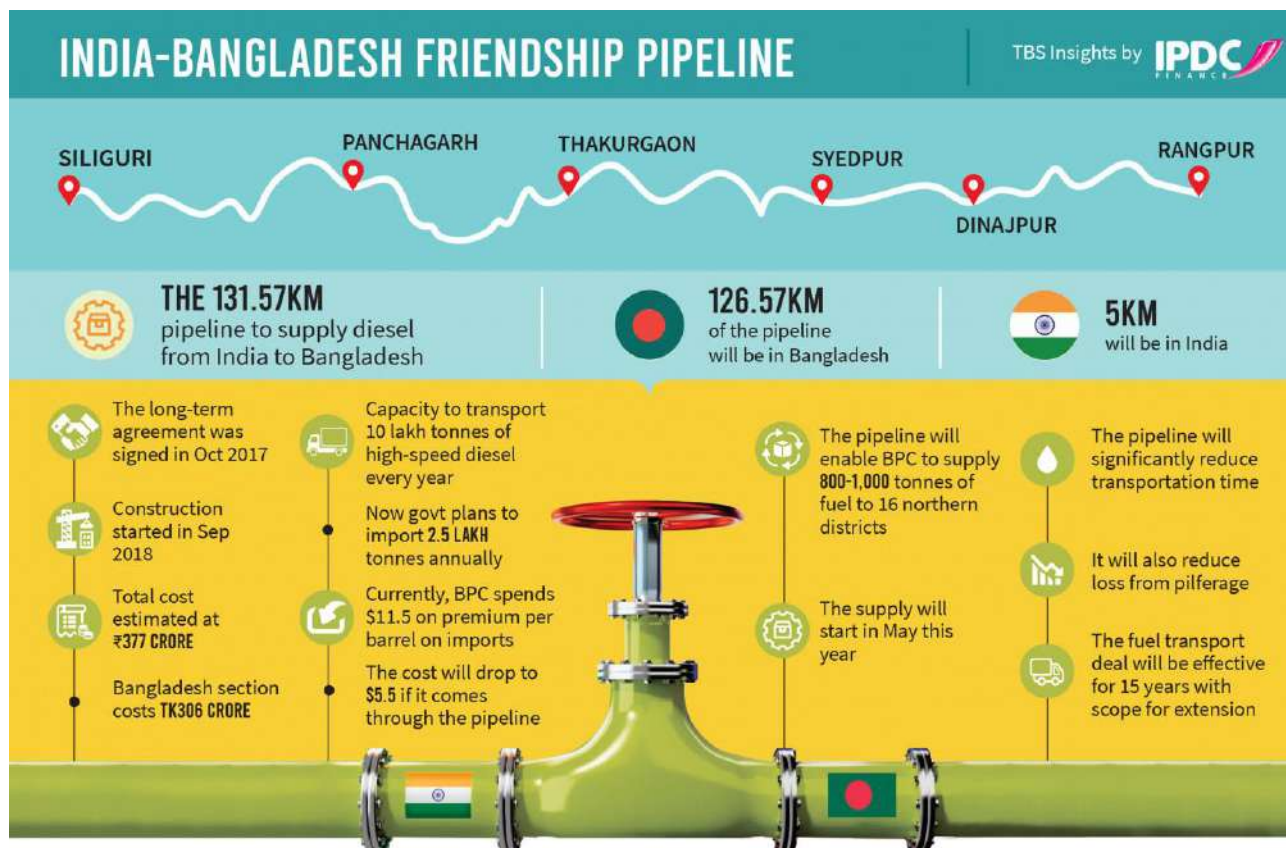
- The Vienna Convention on Diplomatic Relations (1961) provides the framework for the establishment, maintenance and termination of diplomatic relations on a basis of consent between independent sovereign States.
- The Convention was adopted by the United Nations Conference on Diplomatic Intercourse and Immunities on the 18th April, 1961.
- It entered into force on April 24, 1964 and is nearly universally ratified, with Palau and South Sudan being the exceptions.
- **Diplomatic Immunity** - The Convention codifies the longstanding custom of diplomatic immunity.
- Under this immunity, diplomatic missions are granted privileges that enable diplomats to perform their functions without fear of coercion or harassment by the host country.
- It affirms the concept of 'inviolability' of a diplomatic mission, which has been one of the enduring cornerstones of international diplomacy.
- **Article 22** - The 'receiving State' (host nation) has some basic obligations towards the diplomatic missions it hosts on its sovereign territory, under *Article 22* of the Convention.
- The security of any High Commission or Embassy is the responsibility of the host nation.
- While diplomatic missions can also employ their own security, ultimately, the host nation is accountable for security.
- Based on this, the Ministry of External Affairs demanded an explanation on the London incident.
- **In India** - The Diplomatic Relations (Vienna Convention) Act, 1972 was enacted in India to give effect to the Vienna Convention and to provide for matters connected therewith.
- The act extends to the whole of India.

BILATERAL RELATIONS

India-Bangladesh Friendship Pipeline

Prime Minister of India and Prime Minister of Bangladesh jointly inaugurated the India-Bangladesh Friendship Pipeline (IBFP) in a virtual mode.

- The India-Bangladesh Friendship Pipeline (IBFP) is the first cross border energy pipeline between India and Bangladesh.
- IBFP is laid from Siliguri in North Bengal to Parbatipur in Bangladesh's Dinajpur province.
- Construction of the 131.5 kilometre long pipeline began in 2018.
- The pipeline was built with Rs 377 crore drawn from a line of credit offered by India to Bangladesh.



- This is the 2nd cross-border energy pipeline between India and its neighbours where the first one being [Motihari-Amalekhgunj Petroleum Pipeline](#) between India and Nepal.
- The energy pipeline will carry one million tonnes of high-speed diesel (HSD) from Numaligarh refinery in Assam to Bangladesh Petroleum Corporation's Parbatipur depot.
- The Indian Oil Corporation Ltd (IOCL) is the recognised government to government (G2G) exporter of refined products to Bangladesh.

INTERNATIONAL ORGANISATIONS

Collective Security Treaty Organisation

Armenia's Prime Minister accused that Collective Security Treaty Organisation (CSTO) failed to protect Armenia amid a standoff with Azerbaijan over Nagorno-Karabakh.

- To know more about - The Azerbaijan-Armenia Conflict over Nagorno-Karabakh, [click here](#).
- **CSTO** - The Collective Security Treaty Organization (CSTO) originates from the conclusion of the Collective Security Treaty, signed in Tashkent (Uzbekistan) in 1992 (an year after dissolving of Warsaw Pact).
- It is also known as the 'Tashkent Pact' or 'Tashkent Treaty'.
- The Collective Security Treaty was signed by the heads of Armenia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan.
- Later, it was joined by Azerbaijan, Belarus and Georgia (1993).
- The treaty entered into force on April 20, 1994.
- In 2002, it became a full-blown military alliance.

- In 2004, the Organization received an Observer status in the UN General Assembly.
- **Members of the CSTO** – There are 6 - Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia and Tajikistan.
- Azerbaijan, Georgia and Uzbekistan ceased its membership.
- **Headquarters** - CSTO is headquartered in Moscow.
- **Article 4 of CSTO** - The Article 4 of CSTO is very similar to NATO's Article 5.
- It states "If one of the States Parties is subjected to aggression by any state or group of states, then this will be considered as aggression against all States Parties to this Treaty."
- **Structure** - Collective Security Council is the supreme body of the organisation.
- It has these consultative and executive bodies -
 1. CSTO permanent councils
 2. The council of Ministers of Defence
 3. The council of Ministers of Foreign Affairs
 4. The committee of secretaries of the Security councils

AUKUS Deal

AUKUS unveiled plans to provide Australia with nuclear-powered attack submarines in the early 2030s.

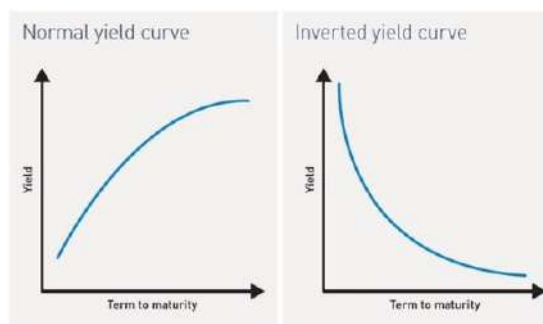
- **AUKUS** is a 2021 **defence deal** between Australia, the UK and the US.
- It was struck to help Australia deploy nuclear-powered submarines in the Pacific region.
- It bolsters Australia's naval heft and to counter China's ambitions in the Indo-Pacific region.
- **Deal** - The United States intends to sell Australia 3 US Virginia class nuclear-powered submarines in the early 2030s.
- Australia has an option to buy 2 more, if needed.
- The submarines are conventionally armed and nuclear powered.
- The multi-stage project will culminate with British and Australian production and operation of a *new* submarine class - SSN-AUKUS.
- **SSN-AUKUS** - It is a trilaterally developed vessel with the best technologies and capabilities of all 3 countries.
- SSN-AUKUS is a combination of the UK's submarine design and advanced United States technology.
- **Implications** - Both Virginia class submarines and SSN-AUKUS will give the Royal Australian Navy the capability to go into the South China Sea to protect its assets and conduct patrols.
- Australia becomes the second nation after U.K. that the U.S. has ever shared its nuclear submarine technology with.

20. ECONOMY

Yield Curve Inversion

The G-sec yield curve became inverted against the similar phenomenon in the US.

- The yield curve represents the yield or interest rates of similar bonds across various tenors (maturity).
- Usually, the yield rises with an increase in the tenor of bonds.
- **Yield Curve Inversion** - It occurs when short-term bonds have higher yields than similar profile long-term bonds.
- It occurs under 2 situation.
 - When the yield of longer-term bonds dips below that of medium-term bonds or



- The yield of medium-term bonds falls below that of short-term bonds.
- **Indicates** - Yield curve inversion could denote an impending economic recession or slowdown.
- However, this phenomenon may be short-lived once the demand for medium papers from banks increases.
- **RBI Measures** - RBI tries to ensure that the yield curve slopes upwards as the tenor of G-Secs increases by increasing the demand for Treasury bills.

Fugitive Economic Offender

India has called upon G20 countries to adopt multilateral action for faster extradition of fugitive economic offenders during the first anti-corruption working group meeting.

- Economic offences have been a problem for many countries, especially when the offenders flee from the jurisdiction of the country.
- The process of [extradition](#) of fugitives is highly complex and time consuming, leading to delay in investigation and trial of offences.
- India emphasised on multilateral action rather than bilateral coordination against fugitive economic offenders, during the inaugural G20 anti-corruption working group meeting in Gurgaon.
- **FEO** - India has a specialised legislation for fugitive economic offence, in the form of [Fugitive Economic Offenders Act, 2018](#).
- The act defines the term 'fugitive economic offender' (FEO).
- FEO is an individual against whom a warrant of arrest in relation to scheduled offence has been issued by any court in India and
 - who has left the country so as to avoid criminal prosecution;
 - or the FEO abroad, refuses to return to face criminal prosecution
- A special court is constituted under the Prevention of Money Laundering Act, 2002.
- The court after hearing the application filed by the Director, appointed by the central government, declares an individual as a fugitive economic offender.
- The act empowers authorities for non-conviction-based attachment and confiscation of proceeds of crime and properties and assets of a 'fugitive economic offender'.

“The Enforcement Directorate (ED) has transferred assets worth over \$180 billion to public sector banks out of estimated losses of \$272 billion on account of frauds by fugitive economic offenders”

FCRA

The Centre suspended the Foreign Contribution Regulation Act (FCRA) licence of the think tank Centre for Policy Research (CPR).

- The Foreign Contribution Regulation Act (FCRA) was enacted during the Emergency in 1976.
- The law sought to regulate foreign donations to individuals and associations.
- The act ensures them to function in a manner consistent with the values of a sovereign democratic republic.
- **2010 amendment** - It was to consolidate the law on utilisation of foreign funds, and to prohibit their use for any activities detrimental to national interest.
- **2020 Amendment** - The government was given tighter control and scrutiny over the receipt and utilisation of foreign funds by NGOs.
- **Registration** - FCRA registrations are granted to individuals or associations that have definite cultural, economic, educational, religious, and social programmes.
- NGOs that want to receive foreign funds must apply online and the **Ministry of Home Affairs** (MHA) makes inquiries through the Intelligence Bureau.
- The MHA is required to approve or reject the application within 90 days.
- **Criteria** - The FCRA requires every person or NGO seeking to receive foreign donations to be registered under the Act and open a bank account for it in State Bank of India, Delhi.
- NGO's should utilise those funds only for the purpose for which they have been received and as stipulated in the Act.

- They are also required to file annual returns, and they must not transfer the funds to another NGO.
- **Validity** - FCRA registration is valid for 5 years.
- **Renewal** - Can be renewed within six months of the date of expiry of registration.
- In case of failure to apply for renewal, the registration is deemed to have expired.
- **Cancellation** - For violation of the Act, defunct or misutilisation of foreign funds.
- Once the registration of an NGO is cancelled, it is not eligible for re-registration for 3 years.
- **Suspension** - The ministry also has powers to suspend an NGO's registration for 180 days pending inquiry, and can freeze its funds.
- All orders of the government can be challenged in the High Court.

Hallmark Unique Identification

The Union Ministry of Consumer Affairs said that the sale of gold jewellery mandates a Hallmark Unique Identification (HUID) from April 1, 2023.

- The HUID is a unique 6-digit alphanumeric code consisting of numbers and letters.
- The HUID will be given to every piece of jewellery at the time of hallmarking and it is **unique** for every piece of jewellery.
- This unique number is **stamped manually**, on jewellery at the Assaying & Hallmarking centres.
- **Present scenario** - Earlier, the HUID used to be of 4 digits and now both 4 and 6 digit HUIDs are used in the market.
- From April 1st 2023, **only 6-digit** alphanumeric code will be allowed.



- **Symbol** - The BIS Hallmark consists of 3 symbols
- **Advantages** - HUID is unique to each piece of jewellery.
- Ensures the credibility of the jewellery
- Enables its traceability
- Doesn't jeopardise data privacy or security.
- **Verification** - The authenticity of hallmarked jewellery can be checked by using 'verify HUID' feature on the BIS Care App.

Bureau of Indian Standards

- The Bureau of Indian Standards (BIS) is the national Standards Body of India established under the Bureau of Indian Standards Act, 1986.
- BIS is working under the aegis of Ministry of Consumer Affairs, Food & Public Distribution, and Government of India.

UPI for in-bound travellers

The Reserve Bank of India (RBI) has allowed in-bound travellers into India to use UPI.

- The Reserve Bank of India (RBI) recently has opened up the UPI channel of payments to non-resident Indians.
- To take this ahead by a step, it has allowed UPI for all foreign travellers entering India.
- A prepaid payment instrument (PPI) is issued for travellers from foreign countries in the form of wallets linked to UPI.
- **Issuer** - Authorised banks and NBFCs can issue **rupee-denominated wallets** to in-bound foreign travellers.
- Also be issued under co-branding arrangements with those permitted to deal with foreign exchange under FEMA.
- Currently, ICICI Bank, IDFC First Bank and two non-bank PPI issuers, Pine Labs Private Limited and Transcorp International are issuing UPI linked wallets.
- The regulator allows a fully KYC compliant wallet to hold up to Rs.2 lakh and this amount is extended to the travellers also.

UPI for NRIs - UPI for NRIs is tagged to fully KYC compliant NRO/NRE accounts linked to their non-Indian mobile phone number and every time UPI is used, money is directly debited from their bank accounts.

- **Usage** - The wallet can be used only to make merchant payments for goods and services and not for transfer money.
- The unutilised money can be repatriated back to the customer from the wallet.
- The wallet can be loaded against cash or by swiping a credit card at the kiosk.
- **Limitations for now** - As a test case, the facility is open only to travellers from G20 countries as India is holding the G20 presidency.
- Only in-bound passengers in select international airports (Bengaluru, Mumbai and Delhi) can avail of the facility for now.

Evergreening of Patents

The Indian Patent Office rejected Johnson & Johnson's (J&J) attempt to extend its monopoly on manufacturing Bedaquiline in India beyond July 2023.

- J&J's primary patents on Bedaquiline will expire in July.
- This will pave the way for generic drug manufacturers to produce Bedaquiline ensuring cheaper and wider access to the drug.
- **'Evergreening'** is a strategy to extend the life of patent which is about to expire in order to retain revenues from them.
- Evergreening is sought filing for patent by making multiple claims in its applications for patent extensions.
- **Basis of Claim** - J&J had invented the method for making a derivative of quinoline in its salt form.
- **Basis of Rejection** - Section 3(d) of the [Patents Act of 1970](#) states that salt forms and derivatives of known substances are not patentable.
- **Article 3(d) of the Indian Patent Act** - [Section 3](#) and [Section 3\(d\)](#) deals with what does not qualify as an invention under the Act.
- The section acts as a safeguard against evergreening of patents and allows for generic competition by patenting only novel and genuine inventions.
- The *Novartis vs. Union of India* case upheld the validity of section 3(d) stating that it complies with the TRIPS agreement and the Doha Declaration.

- **MDR TB** - Multidrug-resistant TB is defined as resistance to isoniazid and rifampin, the two key first-line anti-TB drugs.
- **XDR-TB** - Extensively drug-resistant refers to MDR-TB strains that are resistant to fluoroquinolones and second-line injectable drugs.

Bedaquiline

- It is a crucial drug in the treatment of multi-drug resistant TB patients for whom the first-line drug treatment has stopped working.

GST Appellate Tribunal

Lok Sabha approves setting up of GST Appellate Tribunal to solve disputes linked to the Goods and Services Tax (GST).

- The [GST Act of 2017](#) has provisions to set up an appellate tribunal for disputes between assesses and the authorities.
- **Present Status** - Taxpayers file writ petitions before High Courts.
- **GST Council** - The [council](#) is the apex federal body on GST matters, headed by the Union finance minister, with states represented through their respective finance ministers.
- The 49th GST Council meeting accepted the constitution of GST appellate tribunal (GSTAT).
- **GSTAT** - The tribunal will hear appeals against the orders passed by the Appellate Authority or the Revisional Authority.
- GSTAT will have a Principal Bench and also state benches.
- The [Principal Bench](#) in New Delhi will consist of a President, a judicial member, a

Disputes	Adjudicated by
Up to Rs 50 lakh	Single member bench
Above Rs 50 lakh	1 technical member and 1 judicial member

technical member (centre) and a technical member (state).

- **State benches** will be set up on the request of states which will include 2 judicial members, and 2 technical members representing the Centre and state.
- **Advantage** - Establishment of Appellate tribunal would result in lower burden on the courts and taxpayers.

Interchange Fee

The NPCI has introduced interchange fees of up to 1.1% on merchant UPI transactions done using prepaid payment instruments (PPI) from April 1, 2023.

- The new National Payments Corporation of India (NPCI) guidelines on wallet interoperability establish interchange fee for wallet usage.
- The NPCI has introduced interchange fees on merchant **UPI transactions done using PPIs** from April 1, 2023.
- A PPI payment via UPI means a transaction done via a wallet, like Paytm Wallet, through a UPI QR code.
- The interchange rates vary according to merchant category codes, in the range of 0.5% to 1.1%.
- **Interchange fee** - It is a fee charged by the receiver bank/payment service provider to the merchant.
- **Receiver of interchange fee** - The PPI owner will receive the applicable interchange fee from the merchant.
- The interchange fee is usually levied to cover the cost of accepting, processing and authorising the transaction.
- **Does not apply to** - Users will not be charged for these transactions.
- Peer-to-peer (P2P) and peer-to-peer-merchant (P2PM) transactions also remain unaffected.

Merchant Discount Rate (MDR) is a similar fee charged on merchants but for payments made by users **via credit cards**.

Corporate Debt Market Development Fund

SEBI has introduced the 'Corporate Debt Market Development Fund' to prevent recurrences of events such as the one with Franklin Templeton MF.

- The 'Corporate Debt Market Development Fund' (CDMDF) is a backstop facility for specified debt funds during market dislocations.
- The fund is intended to provide liquidity support in the event of a financial crisis along the lines of what took place in 2008.
- **Aim** - To instil confidence amongst the participants in the corporate bond market and to generally enhance secondary market liquidity.
- **Funding** - The proposed CDMDF will have an initial corpus of Rs 3,000 crore contributed by mutual funds.
- The government has approved a 10-time leverage of the fund (Additional corpus), thus CDMDF may raise funds up to Rs 30,000 crore.
- Contributions to the fund can be done by the specified debt-oriented mutual fund schemes and asset management companies of mutual funds.
- **Guarantee** - The fund is guaranteed by National Credit Guarantee Trust Company (NCGTC).
- **Management** - The backstop facility will be managed by SBI Mutual Fund.
- **Access** - Specified mutual fund schemes will have access to the fund for selling securities during market dislocation.
- This access is proportional to the contribution made to the fund at a mutual fund level.

Quick Facts

A back stop is the act of providing last-resort support or security in a securities offering for the unsubscribed portion of shares.

Drugs, Medicines or Food for Special Medical Purposes

The Union Government has given full exemption from basic customs duty on all medicines imported for treatment of all Rare Diseases.

- **Earlier** - Drugs/medicines attract basic customs duty of 10%, while some categories of lifesaving drugs/vaccines attract a concessional rate of 5% or nil.

- **Now** - A general exemption notification by CBIC substituted 'Drugs, Medicines or Food for Special Medical Purposes (FSMP)' instead of 'drugs or medicines'.
- Thereby, a full exemption from basic customs duty on all drugs and Food for Special Medical Purposes imported for personal use for treatment of all Rare Diseases is given.
- It covers all the rare diseases listed under the [National Policy for Rare Diseases 2021](#).
- This also fully exempted Pembrolizumab (Keytruda) used in treatment of various cancers from basic customs duty.
- The individual importer has to produce a certificate from Central or State Director Health Services to avail this exemption.

Easing health costs

The government has announced policy changes in import duties to ease the healthcare costs of rare diseases. A lowdown:

- Full exemption from basic customs duty on imported drugs and special medical foods for personal use in treating rare diseases
 - Certificate from health authorities required for individuals to get the exemption
 - Previously, drugs/medicines attracted customs duty of 10%, with some lifesaving drugs having concessional rates
 - Pembrolizumab, used in cancer treatment, also fully exempted from basic customs duty
- Annual treatment costs for rare diseases can range from ₹10 lakh to over ₹1 crore per year



21. AGRICULTURE

Coffee Berry Borer

The Coffee Board has issued an advisory to coffee farmers to tackle the attack of berry borer in Robusta coffee plants.

- **Pest** - Coffee Berry Borer (*Hypothenemus hampei*)
- Coffee berry borers are a small species of beetle that live, feed and breed inside coffee berries.
- The damage to the berry severely impacts the quality of coffee beans produced.
- **Infestation** - Pinhole at the tip of berries indicates presence of the pest.
- Female beetle bores into the berries through the navel region and feed on the inside content.
- Infested berries may fall due to injury or secondary infection.
- Severe infestation may result in heavy crop loss.
- **Control Measure** - Brocca traps is an effective measure to control berry borer population in coffee plantations.

22. ENVIRONMENT

Mission Sahbhagita

The Ministry of Environment, Forest and Climate Change has launched Mission Sahbhagita, on the occasion of Azadi Ka Amrit Mahotsav.

- Mission Sahbhagita was launched by Ministry of Environment, Forest and Climate Change (MoEF&CC) in 2022.
- It enables a society ownership approach for participatory conservation and wise use of Wetlands.
- **'Save Wetlands Campaign'** was launched as part of this Mission on the occasion of World Wetlands Day 2023 at Goa.
- World Wetlands Day is celebrated every year on **2nd of February**, the date of the adoption of the Ramsar Convention in 1971.

Quick Facts

As on 14 August 2022 (75th Independence Day), India has 75 Ramsar Sites.

MoEF&CC and Wetlands

- The Ministry has constituted wetlands authorities in States/UTs through Wetlands (Conservation and Management) Rules 2017.
- The State authority is responsible for notification, conservation and management of wetlands in that State.
- National Plan for Conservation of Aquatic Eco-systems (NPCA) is a centrally sponsored scheme for conservation and management of identified wetlands (includes lakes) in the country.

- Under the NPCA scheme, MoEF&CC has sanctioned central assistance for conservation of 165 wetlands across the country, including 42 Ramsar sites.
- Ministry has launched “Wetlands of India Portal” (indianwetlands.in), a publicly available information and knowledge platform for wetlands.

Desalination Plant in Lakshadweep

National Institute of Ocean Technology to set up green, self-powered desalination plant in Lakshadweep.

- Currently the National Institute of Ocean Technology (NIOT) is providing potable water in 6 islands of Lakshadweep.
- It uses Low Temperature Thermal Desalination (LTTD) technology powered by diesel generator sets.
- Each plant provides at least 100,000 litres of potable water every day.
- The plants are funded by the Lakshadweep administration.
- The Ministry of Earth Sciences (MoES) provides technical assistance.
- The proposed self-sustaining plant is the 10th plant in Lakshadweep and is expected to be ready later this year.
- The desalination plant will also supply power to the plant, thus fossil-fuel free and self-powered.

Quick Facts

The NIOT is an institute under the aegis of the Ministry of Earth Sciences (MoES), which works on harnessing energy from the ocean including ocean thermal technology

Low Temperature Thermal Desalination (LTTD)

- LTTD exploits the difference in temperature (nearly 15°C) in ocean water at the surface and at depths of about 600 feet.
- The warmer water's (at the surface) pressure has been lowered using vacuum pumps.
- The cold water at the depth condenses the warmer water at the surface.
- Such de-pressurised water can evaporate even at ambient temperatures.
- This resulting vapour when condensed is free of salts and contaminants and fit to consume.
- **Advantage** - This technology does not require any chemical pre and post-treatment of seawater.
- It does not require effluent treatment.
- It gives less operational maintenance problems compared to other desalination processes.

The Reverse Osmosis, a globally accepted technology suitable for desalination of saline water, is a membrane process which is quite different from LTTD technology.

Plastic Pollution

Only 9% of annual plastic waste recycled and around 85% of plastic packaging worldwide ends up in landfills.

- Plastics are made from natural materials such as cellulose, coal, natural gas, salt and crude oil through a **polymerisation** or **polycondensation** process.
- The primary material in plastic manufacturing, oil or gas are a growing source of the carbon pollution fuelling climate change.
- **Grades of Plastic** - Most plastic packaging is produced from 7 grades of plastic.
- These 7 grades of plastic are largely incompatible with each other, and are costly to sort for recycling.
- PET or Polyethylene terephthalate (number 1) is the world's most common plastic.
- PET is the most recyclable plastic and there is a strong market for its by-product used to make drink bottles, food containers or fibres for clothes.
- The high-density Polyethylene (HDPE) (number 2) is the second most common plastic.

DID YOU KNOW?

The United States is by far the world's biggest plastics polluter, but only around 5% of over 50 million tons of plastic waste produced by households in 2021 in the US was recycled.

- The 5 other plastic types (numbered 3-7) might be collected but are rarely recycled because they have a very small market.
- These hard plastic's value of the raw material is lower than the cost of recycling.
- Virgin plastic are often cheaper than recycled material, making plastic recycling is not economical.
- Plastic Ban** - More than 30 African countries have either completely or partially banned lightweight plastic bags.
- The EU has banned 10 [single-use plastics](#) products.
- [India has banned](#) the use of 19 single-use plastic (SUP) items with effect from 1st July 2022.
- Related Topics** - [CPCB Report on Plastic Waste Generation](#), [Circular Economy](#), [Plastic rocks](#)

						
PET	HDPE	PVC	LDPE	PP	PS	OTHER
POLYETHYLENE TEREPHTHALATE	HIGH-DENSITY POLYETHYLENE	POLYVINYL CHLORIDE	LOW-DENSITY POLYETHYLENE	POLYPROPYLENE	POLYSTYRENE	OTHER
WATER BOTTLES; JARS; CAPS	SHAMPOO BOTTLES; GROCERY BAGS	CLEANING PRODUCTS; SHEETINGS	BREAD BAGS; PLASTIC FILMS	YOGURT CUPS; STRAWS; HANGERS	TAKE-AWAY AND HARD PACKAGING; TOYS	BABY BOTTLES; NYLON; CDS
						

Plastic rocks and Trindade Island

A rock made of plastic debris, discovered in the Trindade Island is an evidence of humans' growing influence over the earth's geological cycles.

- Plastic reaching the remote island of Trindade was an evidence of humans' growing influence over the earth's geological cycles.
- The plastic rock was found in the permanently preserved area, near the place green turtles lay their eggs.
- Plastic Debris** -The fishing nets which is very common debris in Trindade, are dragged by the marine currents, accumulate on the beach.
- When the temperature rises, this plastic melts.
- Over the time, the melted plastic became intertwined with rocks on the island.
- These rocks are called '**plastiglomerates**' since they are made of a mixture of sedimentary granules and other debris held together by plastic.

Trindade Island

- Trindade Island is the easternmost and most remote point in Brazilian territory.
- It is located about 1,140 km from the mainland of Brazil.
- Trindade surfaced owing to volcanic activity under the Atlantic Ocean about 3 million years ago.
- Biodiversity** - The Island hosts many species of native flora and fauna including seabirds and marine creatures.
- Trindade is one of the most important conservation and nesting spots for green sea turtles (*Chelonia mydas*).
- It hosts native seabirds like the Trindade Petrel, and the great frigatebird, which are only found in the Indo-Pacific.
- The surrounding marine region also hosts species of sharks, dolphins, and corals.
- Habitation** - Trindade is a protected area not inhabited by any humans except for a small Brazilian Navy Crew.



Biotransformation Technology

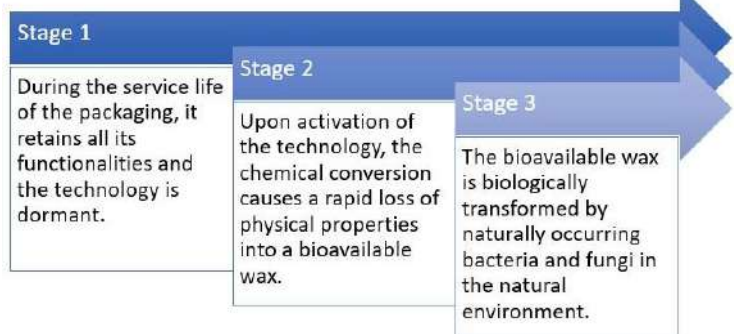
A UK-based start-up claims to have developed Biotransformation technology that can alter the state of plastics and make them biodegradable.

- Biotransformation technology is a process which alters the state of plastics and make them biodegradable.

- The technology would digest the plastic packaging waste naturally with the help of microbes without leaving behind any microplastics.
- It ensures that plastic which escaped refuse streams to be fully biodegrade in the natural environment.
- **Process** - Plastics made using this technology are given a pre-programmed time during which it looks and functions like conventional plastics.
- After expiry and exposure to the external environment, it self-destructs and biotransforms into bioavailable wax.
- This wax is then consumed by microorganisms, converting waste into water, CO₂, and biomass.
- The technology attacks the crystalline and amorphous region of the polymer structure, rapidly turning it into a wax-like material.
- This wax-like material is no longer a plastic and is not harmful to the environment.
- **Utility** - This technology to reduce waste can be used in the 2 prime plastic waste producing sectors - food packaging and health care.
- **Indian initiatives** towards plastic waste management
 1. Plastic waste management gazette.
 2. Last year, the Indian government imposed a ban on single-use plastics.
 3. National Dashboard on Elimination of Single Use Plastic and Plastic Waste Management.
 4. Extended Producer Responsibility (EPR) portal.

DID YOU KNOW?

The biotransformation technology is the world's first that ensures polyolefins fully biodegrade in an open environment causing no microplastics



Zero Waste Day

March 30, 2023 will mark the first-ever *liter* Waste Day.

- On 14 December 2022, the United Nations General Assembly's 77th session adopted a resolution to proclaim **30 March** as International Day of Zero Waste.
- UNGA proclaimed to observe Zero Waste day annually.
- The UN Environment Programme (UNEP) and the UN Human Settlements Programme (UN-Habitat) jointly facilitate the observance of International Day of Zero Waste.
- Zero Waste Day aims to promote sustainable consumption and production patterns and encourage the global community to shift towards circularity.
- **'Swachhotsav - 2023'** was organised by Ministry of Housing and Urban Affairs as part of India's celebration of the International Day of Zero Waste 2023.

DID YOU KNOW?

According to the UN data, an estimated 2.24 billion tons of municipal solid waste is generated annually, of which only 55% is managed in controlled facilities.

Willow Project

The Joe Biden-led United States administration formally approved the controversial Willow project in Alaska.

- Willow Project is a massive and decades-long oil drilling venture on Alaska's North Slope in the National Petroleum Reserve.
- The National Petroleum Reserve is owned by the federal government.
- It is located about 320 kilometres north of the Arctic Circle.
- The area where the project is planned holds up to 600 million barrels of oil.
- The project is yet to be constructed and the oil would take years to reach the market.
- **Project Timeline** - The project was proposed by ConocoPhillip, a Houston-based energy company exploring in Alaska.

- It was originally approved by the Trump administration in 2020 for 5 drill pads, which was reduced to 3 by the Biden administration.
- **Controversy** - The project is hugely controversial for its likely environmental impact.
- The project would generate enough oil to release 278 million tonnes of carbon dioxide a year.
- It also raises concerns about danger to freshwater sources and threats to migratory birds, caribou, whales and other animals that inhabit the region.

Sunabeda Wildlife Sanctuary

The strawberry harvest is done by farmers who live in one of the 56 villages in the tropical deciduous forest of the Sunabeda Wildlife Sanctuary.

- The Sunabeda plateau is largely a grass-covered plateau 3,000 feet above sea level, along the Odisha-Chhattisgarh border
- The Sunabeda wildlife sanctuary is in Nuapada district, Odisha adjoining Udanti and Sitanadi Sanctuaries of Chhattisgarh State.
- The sanctuary houses canyons and 11 waterfalls apart from diverse wildlife.
- The sanctuary forms the catchment area of the Jonk, Sunder and Indra rivers.
- **Fauna** - Tigers, swamp deer, leopards, gaurs, sloth bear, barking deer, common langur and rhesus monkeys.
- **Birds** - The sanctuary is home to vultures, hill mynah, partridge, and pea fowls.
- It forms a migration link for wild buffaloes across the two states of Odisha and Chhattisgarh.
- The Chuktia Bhunjia tribes lives inside the sanctuary.

Chuktia Bhunjia tribe

- Chuktia Bhunjia tribe is one of 13 [PVTGs](#) found in Odisha.
- The Chuktia Bhunjia Development Agency (CBDA) works for the development of the tribe, especially in livelihood programmes.

Asola Bhatti Wildlife Sanctuary

The Environment Minister opened the Neeli Jheel ecotourism site in the Asola Bhatti Wildlife Sanctuary to the public.

- The Asola Bhatti sanctuary is situated in the South Delhi Ridge section of the Aravalli range on the Delhi-Haryana border.
- It lies in Southern Delhi as well as northern parts of Faridabad and Gurugram districts of Haryana state.
- It is spread over an area of 6,784 acres and covers 32.71 sq km.
- It is also part of the Sariska-Delhi Wildlife Corridor which runs from the Sariska Tiger Reserve in Rajasthan to the Delhi Ridge.
- **Protection** - Mining for quartzite and sand in the area was banned in 1991.
- The Eco-Task Force of the Territorial Army has also been part of protection and plantation at the sanctuary since 2001.
- In 2019, the area around the boundary of Asola Bhatti Wildlife Sanctuary in Gurgaon and Faridabad was declared as an Eco-Sensitive Zone (ESZ).
- **Flora** - The type of forest in the sanctuary is identified as 'thorny scrub'.
- A forest nursery and a seed bank were also set up at the sanctuary.
- **Fauna** - Leopards, striped hyena, jungle cat, golden jackal, Indian hare, Indian boar, black buck, sambar deer, spotted deer, and hog deer.
- **Neeli Jheel** - It has been developed as an eco-tourism site inside the sanctuary.
- Neeli Jheel is a lake formed in an abandoned mining pit.
- The 100 feet deep Neeli Jheel is an important source of water for wildlife in the sanctuary.
- Four solar-powered artificial waterfalls has been developed there, in which the water cascades down 100 feet to the lake below.



Mudumalai Tiger Reserve

The Oscar for Best Documentary Short was announced for 'The Elephant Whisperers' which revolves around a family who adopts 2 orphan baby elephants in Mudumalai Tiger Reserve and rears them.

- Mudumalai Tiger Reserve (MTR) is located in the Nilgiris District of Tamil Nadu.
- It is at the tri-junction of Karnataka, Kerala and Tamil Nadu.
- The Tiger Reserve comprises of the wildlife sanctuary and the national park of the same name.
- It forms a part of the Nilgiris Biosphere Reserve.
- It has a common boundary with [Wyanad Wildlife Sanctuary](#) (Kerala) on the West, Bandipur Tiger Reserve (Karnataka) on the North.
- The Moyar River flows downstream into the Mudumalai Tiger Reserve and is the natural line of division between Mudumalai and Bandipur Sanctuary.



Theppakadu Elephant Camp

- Theppakadu Elephant Camp is located deep inside the Mudumalai National Park in the Nilgiris, Tamil Nadu.
- The Elephant camp located on the bank of the river Moyar, was established way back in 1927.
- It is the oldest elephant camp in Asia.
- The Camp elephants consist of rescued and captured conflict animals.
- They are tamed at this camp and trained to become 'kumki' elephants meant to help in the capture of wild elephants.
- These elephants are mainly used in Human- Wild animal conflicts, Forest Mansoon patrolling, eco-tourism, elephant conservation, Education etc.

National Chambal Sanctuary

Three States have commenced joint action to stop illegal sand mining in National Chambal Sanctuary.

- National Chambal Sanctuary is situated at the trijunction of Rajasthan, Madhya Pradesh and Uttar Pradesh.
- The [Chambal River](#) cuts through the mazes of ravines and hills in the sanctuary.
- Significance** - The sanctuary is known for its population of [gharials](#) and Gangetic dolphins.

Gharials	
Gharials are fish-eating fresh water crocodiles and are a good indicator of clean river water	
Protection	Status
Wild Life (Protection) Act, 1972	Schedule I
IUCN	Critically Endangered
CITES	Appendix I

- The 5,400 sq. km. sanctuary is a fragile lotic ecosystem critical for breeding of gharials.
- Threat** - Illegal sand mining is threatening the flora and fauna in some parts of the sanctuary.
- Avian site** - The sanctuary is listed as an 'Important Bird and Biodiversity Area' and is also a proposed Ramsar site.
- About 320 species of resident and migratory birds inhabit the sanctuary, and migratory birds from Siberia form part of its rich avian fauna.
- The river sanctuary is the breeding site of [Indian Skimmer](#).
- Protection** - The sanctuary is protected under the Wildlife Protection Act, 1972.

Vembanad and Ashtamudi Lakes

The National Green Tribunal has slapped a penalty of Rs 10 crore on the Kerala government for failing to protect the Vembanad and Ashtamudi lakes.

Vembanad Lake

- Vembanad Lake is also known as Punnamada Lake, Kochi Lake, Vembanad Kayal and Vembanad Kol.
- It is one of the largest lakes in Kerala and the longest lake in the country.
- It is the second largest wetland system in India after the Sunderbans in West Bengal.
- **Rivers** - The Lake has its source in 4 rivers, Meenachil, Achankoil, Pampa and Manimala.
- **Significance** - Kuttanad situated on the banks of Vembanad Lake is well known for its below sea level farming.
- The Nehru Trophy Boat Race (Vallam Kali) is a Snake Boat Race hosted in the lake every year in the month of August.
- **Conservation**
 - Ramsar Site under Ramsar Convention (1971)
 - The **Kumarakom Bird Sanctuary** is located on the east coast of the lake.

Ashtamudi Lake

- Ashtamudi Lake or Ashtamudi Kayal in the Kollam District is called the gateway to the backwaters of Kerala.
- **River** - Kallada River is the major source of water for Ashtamudi Lake.
- Ashtamudi means '**eight braids**' in Malayalam, which indicates the palm-shaped topography of the lake with multiple branches.
- **Significance** - It possesses a unique wetland ecosystem and the Ashtamudi estuary is famous for its diverse biodiversity and ecological peculiarities.
- The lake is well known for its houseboat and backwater resorts.
- **Conservation** - Ramsar Site under Ramsar Convention (1971)

Shetland Sanctuary

Shetland sanctuary in Scotland fights to save seals as pollution takes toll.

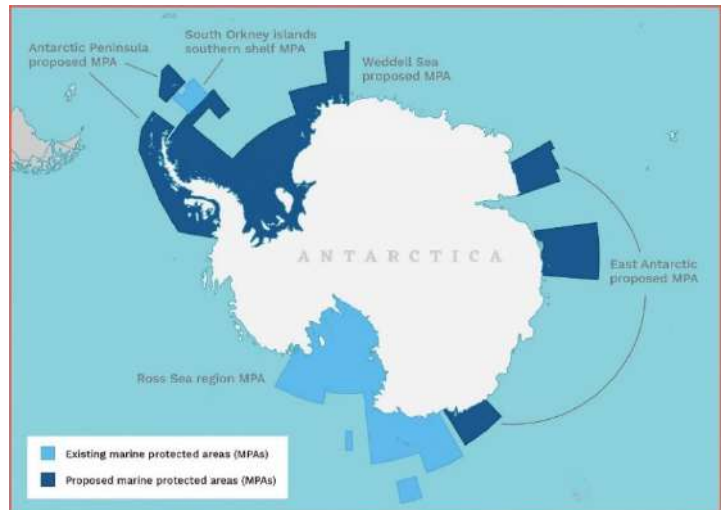
- **Shetland** - Shetland Island is an archipelago in Scotland.
- It is known for its rugged coastlines, dramatic cliffs and diverse wildlife.
- It is an important habitats for common or harbour seals, grey seals and otters.
- **Sanctuary** - The Hillswick Wildlife Sanctuary was founded in 1987 at Shetland.
- Hillswick is a village north of Shetland's main town, Lerwick.
- It is the only sanctuary on Shetland.
- The sanctuary involves in rescuing and rehabilitating sick, injured and abandoned seals and otters and release them back into the wild.

MPA in Antarctica

The Union minister of state for science and technology and earth sciences said that India will continue to support setting up 2 MPAs in Antarctica.

- A marine protected area (MPA) is a section of the ocean where a government has placed limits on human activity.
- An MPA provides protection for all or part of the protected marine area's natural resources.
- It is managed for the long-term conservation of marine resources, ecosystem services or cultural heritage.
- Certain activities within an MPA are limited or prohibited to meet specific conservation, habitat protection, ecosystem monitoring, or fisheries management objectives.
- Marine protected areas can have many different names, including marine parks, marine conservation zones, marine reserves, marine sanctuaries, and no-take zones.

- **Southern Ocean** - The Southern Ocean that encircles Antarctica covers around 10% of the global ocean and is home to nearly 10,000 unique polar species.
- The Southern Ocean has 2 MPAs
 1. One in the southern shelf of the South Orkney Islands.
 2. The other in the Ross Sea.
- These fully protect only 5% of the ocean.
- All types of fishing, other than scientific research, are prohibited within the southern shelf of the South Orkney Islands MPA.
- Discharges and dumping from fishing vessels are also not allowed.



- In the Ross MPA, 72 % of the waters are closed to commercial fishing.
- **Designation of MPAs** - The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) is responsible for designating and regulating MPAs in the Southern Ocean.
- **Proposed MPAs** - Since 2012, the European Union and Australia have proposed an MPA in East Antarctica.
- An MPA was proposed in the Weddell Sea by the EU and Norway and in the waters surrounding the Antarctic Peninsula by Chile and Argentina.
- In 2021, India extended its support for designating East Antarctica and the Weddell Sea as MPA.

Conservation of Antarctic Marine Living Resources

- **CCAMLR** - CCAMLR is an international treaty to manage Antarctic fisheries to preserve species diversity and stability of the entire Antarctic marine ecosystem.
- CCAMLR came into force in April 1982. And India has been its permanent member since 1986.
- Its Members include 25 states and the European Union, which meet annually in Hobart, Australia.
- **CCAMLR India coordinator** - The Ministry of Earth Sciences and the Centre for Marine Living Resources and Ecology (CMLRE) in Kochi, Kerala.

SPECIES IN NEWS

Jerdon's narrow-mouthed frog

After 89 years, Jerdon's narrow-mouthed frog was rediscovered in Western Ghats.

- Jerdon's narrow-mouthed frog (*Uperodon montanus*) was first identified in 1934 by a British scientist.
- Jerdon's narrow-mouthed frog is endemic to the higher altitudes of Western Ghats.
- **Characteristics** - The frogs have a longish snout.
- It has a shiny brown skin with darker brown, red and golden spots on the back and head.
- Its tadpoles are free-swimming and exotrophic (they feed on other species).
- **Habitat** - They are found in rock pools or tree holes filled with rainwater.
- This frog is considered a montane species and is restricted to higher altitude ranges up to 1700m. Now reported at 1,916 m.
- **Distribution** - They are distributed from near Wayanad south across the Palghat and the Shencottah gaps to the Agasthyamalai hills.
- **Conservation Status** -
 - **IUCN** - Near Threatened



Great Seahorses

The great seahorse could be migrating laboriously toward Odisha due to extensive fishing off the Coromandel Coast.

- Seahorses belong to the family *syngnathid*.
- They are known for their unusual body shape and biology.
- In seahorses males incubate the fertilized eggs, sometimes up to 1,500 in a brood pouch.
- Distribution** - There are 46 species of seahorses reported worldwide.
- 12 species of seahorses are found in the Indo-Pacific region, one of the hotspots of seahorse populations.
- In India** - The coastal ecosystems of India house 9 species, distributed along the coastal regions of India.
- Habitat** - Seahorse populations are distributed across diverse ecosystems such as seagrass, mangroves, macro algal beds, and coral reefs.
- Migration** - Seahorses are poor swimmers but migrate by rafting.
- They cling on to floating substrata such as macro algae or plastic debris for dispersal by ocean currents.
- Threats** - Overexploitation for traditional Chinese medicines and as ornamental fish, general destructive fishing and fisheries bycatch.
- Conservation Status** - Great Seahorse (*Hippocampus kelloggi*)



DID YOU KNOW?

In 2001 all the seahorse species found in India was kept in **Schedule I** of WLPA, 1972 and from then on fishing and trading activities on seahorses were banned in India.

Protection Status	
Wildlife (Protection) Act, 1972	Schedule I
IUCN Red List Status	Vulnerable
CITES	Appendix II



Horseshoe Crabs

Horseshoe crabs appear to be disappearing from their familiar spawning grounds along Chandipur and Balaramgadi coast in Odisha.

- [Horseshoe crabs](#) are one of oldest living creatures on the earth.
- These crabs are basically deep sea animals.
- The creature has lived on earth for about 450 million years without undergoing any morphological change.
- In India** - India one of the major breeding ground and maximum density of Horseshoe crabs is found along the Odisha coast.
- Breeding** - They come to coasts of Balasore in Odisha and Digha and Sundarban in West Bengal for breeding purposes.
- They select a suitable site for laying their eggs.
- Balasore used to be the largest spawning ground.
- Threats** - Their spawning activities are affected due to unregulated fishing activities.
- Blood** - These crab's blood is **blue** in colour due to a different oxygen-carrying protein, called hemocyanin which has copper.
- (human blood has haemoglobin which has iron that gives red colour to our blood)
- Horseshoe crab's blood contains a special clotting agent limulus amebocyte lysate (LAL) which detects a contaminant called endotoxin.
- Medicinal Value** - These crabs are medicinally priceless and are used to test vaccines, drugs and medical devices.
- Their blood is used to ensure that vaccines aren't contaminated with endotoxins.

DID YOU KNOW?

The Japanese government has imposed complete ban on Horseshoe crab fishing and they have declared the animal as an endangered species

Wildlife Protection Act 1972

Schedule IV

Raccoon Dogs

A new analysis of genetic data collected from the Huanan Seafood Market in Wuhan, China, has linked coronavirus to raccoon dogs.

- Raccoon dogs are neither dogs nor raccoons.
- They belong to the *canid* family and are closely related to foxes.
- **Characteristics** - They are the only canids that hibernate during the winter.
- Their fur becomes thicker during winter.
- They are monogamous, often living in pairs.
- **Species** - There are 2 species of raccoon dogs:
 1. *Nyctereutes procyonoides* - the common raccoon dog (the species that was in the Wuhan market)
 2. *Nyctereutes p. viverrinus* - the Japanese raccoon dog
- **Diet** - These animals are omnivores and relish food sources such as rodents and berries.
- **Distribution** - They are originally from East Asia and are commonly found in parts of China, Korea and Japan.
- In Japan, they are known as **tanuki** because of the Japanese folklore and are revered.
- They are also found in Europe, where they were brought by fur traders.
- **Economic Significance** - These animals are farmed for their fur.
- Raccoon dog pelts are produced in China from racoon dog.



Sea Slugs

Marine biologists and citizen scientists document unique species of sea slugs from Visakhapatnam coast.

- A unique species of nudibranch sea slugs were documented on the Visakhapatnam shore.
- These do not have shells and their gills are exposed.
- These sea slugs are found in places with abundant prey base which may vary from sponges, hydroids and algae.
- **Significance** - The nudibranchs are usually found in coral reefs.
- Their presence is a significant indicator of a strong coral ecosystem.
- **Shaggy Seahare** was recorded for the first time from the coast.
- They mainly feed on algae and is usually seen in large numbers when there is algal bloom.
- **Photosynthetic Animals** - 2 species of sap-eating sea slugs was also recorded that are the only photosynthetic animals in the world.
- These can store chloroplast from the algae in their skin and do photosynthesis in absence of food (Sap).
- Most of the nudibranchs are active through the day, but there are some species that are also nocturnal in nature.

23. SCIENCE AND TECHNOLOGY

SPACE

Tsuchinshan-ATLAS - Comet C/2023 A3

Astronomers have spotted a comet which could be an exceptionally bright comet in the night sky in 2024.

- Comet C/2023 A3 (Tsuchinshan-ATLAS) was discovered by Purple Mountain Observatory in China and the Asteroid Terrestrial-impact Last Alert System, ATLAS in South Africa.
- The comet is currently between the orbits of Jupiter and Saturn, a billion kilometres from Earth.

- It is moving on an orbit that will bring it to within 59 million kilometres of the Sun (perihelion) in September 2024.
- The brightness of the comet could be nearly as bright as Sirius, which is the brightest star in the night sky.
- The brightness of the comet could be nearly as bright as Sirius, which is the brightest star in the night sky.
- Currently, only the most powerful telescopes on the planet can actually observe it, but in September 2024, it could potentially be visible even to the naked eye.
- **Similar Topic** - [Green Comet - C/2022 E3 \(ZTF\)](#)

Venusian Volcano

Scientists get first direct geological evidence of an active volcano in the Venusian surface.

- A fresh analysis of radar images obtained more than 30 years ago has yielded new evidence indicating Venus is currently volcanically active.
- NASA's Magellan spacecraft imaged portions of Venus up to 3 times spanning 24 months from 1990 to 1992.
- It showed that a volcanic vent about 1.6 km wide on the Venusian surface expanded and changed shape over an 8-month span in 1991.
- The Atla Regio area of Venus is where 2 of the biggest volcanoes of Venus, Ozza Mons and Maat Mons are located.
- The vent is situated on **Maat Mons**, which at about 9 km tall is the planet's highest volcano and second-highest mountain.
- **Venus** - It is the second planet closer to Sun in the solar system.
- The diameter of Venus is about 12,000 km and is slightly smaller than Earth.
- Due to its size, Venus is often called as 'Earth's twin'.
- It has a thick atmosphere mainly of carbon dioxide which traps in heat in a runaway greenhouse effect.
- This thick atmosphere makes Venus the solar system's *hottest planet*.
- Venus lacks plate tectonics which is responsible for most of volcanoes on Earth.

Venus Missions

- The first spacecraft that visited Venus was the Soviet Union's Venera series.
- NASA has 2 missions to Venus in near future - [DAVINCI+ and VERITAS](#).
- European Space Agency (ESA) Venus mission - [EnVision](#)
- Japan's Akatsuki spacecraft has been studying Venus' atmosphere since 2015.
- ISRO's Venus mission Shukrayaan I is expected to be launched in December 2024.

Terminator Zones

A new study describes how extra-terrestrial life has the potential to exist on distant exoplanets inside a special area called the "terminator zone".

- **Tidally locked planet** - 'Tidally locked' is a gravitational phenomenon in which one side of the planet always faces the star.
- Most of the exoplanets are tidally locked and have a permanent day side and a permanent night side.
- The dark sides of terminator planets could have perpetual night and freezing temperatures.
- The side facing the star could be too hot for water to remain liquid.
- Such planets are quite common as they exist around M-dwarf stars.
- Such planets can sustain habitable climates confined to the terminator region

“M-dwarf stars are relatively dimmer than our sun and make up about 70% of the stars seen in the night sky”

- **Terminator Zone** - The 'terminator' is the dividing line between the 'Day' and 'Night' sides of the planet.
- Terminator zones are the border region between light and dark halves of an exoplanet.
- Terminator zones are the regions that could exist in that sweet spot between too hot and too cold.
- They are also known as '**Twilight zones**'.

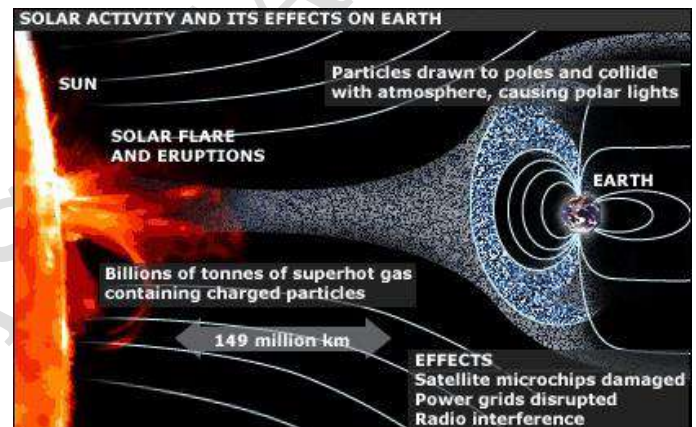
Geomagnetic Storm

A really powerful solar storm hit our planet recently.

- The geomagnetic storm got a severity grade of G4 from the US National Ocean and Atmospheric Administration (NOAA).
- **G4 grade** - It is the second-highest grade possible as per NOAA.
- A G4 grade solar storm can potentially cause widespread voltage control problems for power grids and can mistakenly trip key electric assets of the grid.
- It can also create problems for spacecraft operations, causing surface charging and tracking problems.
- **Geomagnetic Storm** - A geomagnetic storm refers to the disruptions to the Earth's magnetic field caused by solar emissions.
- When a Coronal Mass Ejection (CME) or a high-speed solar stream reaches our planet, it slams into the magnetosphere and peels it open.
- **Impacts** - The peeling allows energetic solar wind particles to stream down and hit our atmosphere over the poles.
- A rapid drop in the Earth's magnetic field strength is seen at the earth's surface.
- This decrease lasts about 6 to 12 hours, after which the magnetic field gradually recovers over a period of several days.
- This solar event can supercharge auroras and makes them visible in places where they wouldn't be visible normally.
- **Related Topics** - [Solar Storm](#), [Coronal Magnetic Field](#), [Solar Flare](#), [Coronal Holes](#)

DID YOU KNOW?

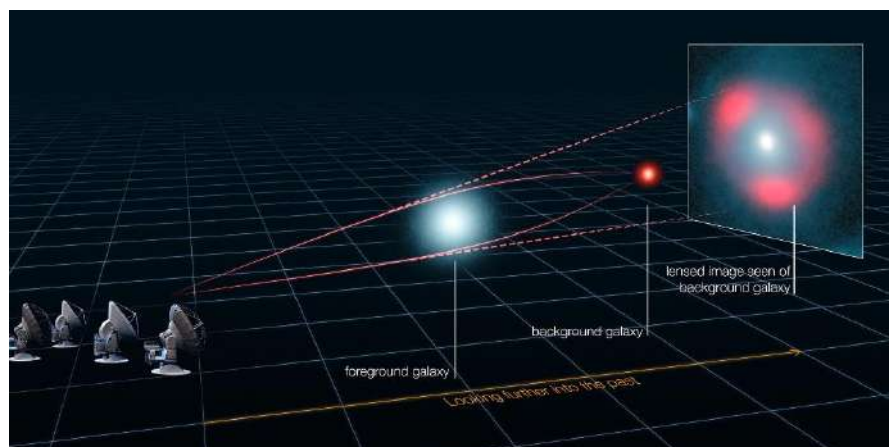
The Earth's magnetosphere is created by our magnetic fields and it usually protects us from the particles emitted by the Sun



Gravitational Lensing

Astronomers have discovered one of the biggest black holes ever found due to Gravitational lensing.

- The ultra-massive black hole discovered is over 30 billion times the mass of our Sun.
- **Gravitational lensing** is the phenomenon where a foreground object (a galaxy or a black hole) bends the light from a more distant object behind it.
- It warps the space around the massive foreground object, distorting the image of a background object into rings, arcs or multiple points of light.
- The foreground object acts as a gravitational lens and the distant object in the background is magnified.
- Gravitational lenses help reveal dark matter in galaxies.
- [Einstein ring](#) is an example of gravitational lensing.



DEFENCE

Depleted Uranium Munitions

The U.K. would provide Ukraine with armour-piercing rounds containing depleted uranium.

- Depleted uranium (DU) is a by-product of uranium enrichment.
- Enriched uranium is highly radioactive and is used in nuclear reactors and nuclear weapons.
- In comparison to enriched uranium, depleted uranium is much less radioactive and is incapable of generating a nuclear reaction.
- Due to its high density (more dense than lead), depleted uranium is widely used in weapons as it can easily penetrate armour plating.
- The US began manufacturing armour-piercing rounds with depleted uranium in the 1970s and has since added it to composite tank armour to strengthen it.
- **Weapons** - The US, Britain, Russia, China, France and Pakistan produce uranium weapons.
- Depleted uranium munitions are **not** classified as nuclear weapons, as per the International Coalition to Ban Uranium Weapons.
- Still they emit low levels of radiation, mainly α -particles and can cause severe diseases.
- **Risks** - Ingesting or inhaling them depresses renal function and raises the risk of developing a range of cancers.
- Depleted uranium munitions which miss their target can poison groundwater and soil.

About 340 tons of depleted uranium were used in munitions during the 1991 Gulf War, and an estimated 11 tons in the Balkans in the late 1990s

HEALTH

Proton Beam Therapy

Cancer patients in India face twin challenges in accessing proton beam therapy (PBT)

- Proton beam therapy (PBT) represents a very sophisticated form of modern radiation therapy.
- PBT offers the highest degree of precision and efficacy in cancer treatment.
- The PBT is considered a viable alternative to radiation for treating solid tumours, especially for head and neck cancers.
- Unlike radiation which uses X-rays, PBT uses **protons** to tackle cancer.
- While radiation can prove toxic to the whole body, protons can destroy cancer cells precisely by targeting tumours, thus saving adjoining organs.
- **PBT in India** - Currently there are 42 PBT machine installations in the U.S., followed by Europe (35), Japan (26), China (7), Taiwan (3) and South Korea (2) and India has only one.
- Apollo Hospital in Chennai is the only centre in the whole of South and West Asia offering the PBT.
- **Government Initiative** - Indian government to install a PBT unit in the All India Institute of Medical Sciences (Jhajjar) - Shelved.
- The foundation stone was laid for PBT unit at the National Hadron Beam facility of Tata Memorial Hospital in Navi Mumbai in 2014.

ICMR Guidelines for AI

The Indian Council of Medical Research (ICMR) has released India's first Ethical Guidelines for Application of Artificial Intelligence in Biomedical Research and Healthcare.

- The Indian Council of Medical Research (ICMR) is the India's apex body for formulation, coordination and promotion of biomedical research.
- **Publisher** - ICMR has released the document titled Ethical Guidelines for AI in Healthcare and Biomedical Research.

- The ethical guidelines document was prepared by the Department of Health Research and ICMR Artificial Intelligence Cell, Delhi.
- **Aim** - It aims at creating an ethics framework which can assist in the development, deployment, and adoption of AI-based solutions in healthcare.
- The document is intended for all stakeholders involved in research on AI in biomedical research and healthcare.
- The guidelines include ethical principles, guiding principles for stakeholders, an ethics review process, governance of AI use, and informed consent.
- **Other initiatives** - India already offers streamlining of AI technologies in healthcare through
 1. National Health Policy (2017)
 2. National Digital Health Blueprint (NDHB 2019)
 3. Digital Information Security in Healthcare Act (DISHA 2018) under which National Data Health Authority and other health information exchanges were established.

BIO-TECHNOLOGY

Mice created with cells from 2 males

For the first time, scientists at Osaka University in Japan have created baby mice from two males.

- The baby mice created from two male mice opens up new avenues in reproductive biology and fertility research for animals and people.
- The scientists took skin cells from the tails of male mice and transformed them into stem-cell-like 'induced pluripotent stem cells'.
- Then they converted male mouse cells into female cells through a process and produced functional egg cells.
- The process involved growing the pluripotent stem cells and treating them with a compound called *reversine*.
- Finally, they fertilized those eggs and implanted the embryos into female mice.
- About 1% of the embryos (7 out of 630) grew into live mouse pups.
- The pups appeared to grow normally and were able to become parents themselves in the usual way.
- **Synthetic mouse embryos** - In 2022, scientists in California and Israel created synthetic mouse embryos.
- These synthetic mouse embryos are created from stem cells without a dad's sperm or a mom's egg or womb.
- Those embryos mirrored natural mouse embryos up to 8 ½ days after fertilization, containing the same structures, including one like a beating heart.

“Pluripotent stem cells can develop into many different types of cells or tissues”

INFORMATION TECHNOLOGY

GPT-4

AI powerhouse OpenAI has announced GPT-4 that powers ChatGPT and Microsoft Bing.

- GPT-4 is a large multimodal model created by OpenAI.
- GPT-4 succeeds the technology behind [ChatGPT](#).
- GPT-4 powers Microsoft's Bing AI chatbot.
- GPT-4 is supposedly bigger, faster, and more accurate than ChatGPT in many areas.

GPT-4	Chat GPT
Multimodal	Single modal
Generate content from both image and text prompts	Only text prompts

GPT-4 can generate responses of more than 25,000 words.	GPT-3.5 is limited to about 3,000-word responses.
GPT-4 is more multilingual.	GPT-3.5 and other LLMs handle English as machine learning data is mostly in English.
GPT-4 could handle up to 32,768 tokens or around 64,000 words.	GPT-3.5 model could handle 4,096 tokens or around 8,000 words.

- **Limitations** - GPT-4 has similar limitations as its prior versions.
- It is less capable than humans in many real-world scenarios.
- It's still not fully reliable and makes reasoning errors.
- But it will be a lot harder to trick GPT-4 into producing undesirable outputs

Bharat 6G Vision

The Prime Minister unveiled the Bharat 6G Vision Document in the ITU Area Office in Vigyan Bhawan.

- The Bharat 6G Vision Document lays out a roadmap to roll out 6G services across the country by 2030.
- 6G will be implemented in 2 phases (2023 - 2025 and 2025 - 2030).
- An apex council will be set up to oversee the project and deal with issues related to it.
- The apex council will facilitate and finance research and development, design and development of 6G technologies by Indian start-ups, companies, research bodies and universities.
- The document is prepared by the Technology Innovation Group on 6G (TIG-6G).
- TIG-6G was constituted in 2021 to develop a roadmap and action plans for 6G in India.
- The national mission for 6G will have a 9-year tenure (2022-2031), with funding in 3 tranches.
- The mission will catalyse coordination and interactions between various stakeholders in Centre and State governments as well as with industry and academia.
- **6G Test Bed** will provide a platform to test and validate the evolving ICT technologies.
- The Bharat 6G Vision Document and 6G Test Bed will be key in boosting the faster technology adoption in the country.

International Telecommunication Union (ITU)

- ITU is the United Nations' specialised agency for information and communication technologies (ICTs).
- It is headquartered in Geneva and has a network of field offices, regional Offices and area offices.
- **ITU Area Office** - The ITU Area Office is fully funded by India.
- It is located in the Centre for Development of Telematics (C-DoT) building at Mehrauli, New Delhi.
- It will serve India, Nepal, Bhutan, Bangladesh, Sri Lanka, Maldives, Afghanistan and Iran, promoting economic cooperation in the region.

MeitY launches GAC

The Ministry of Electronics & Information Technology (MeitY) launched the Grievance Appellate Committee, a faceless dispute resolution mechanism.

- Grievance Appellate Committee (GAC) is a faceless (online) dispute resolution mechanism.
- GAC makes digital platforms (big and small), accountable to Digital Nagriks (users).
- **Act** - The GAC was one of the provisions in the [Information Technology \(Intermediary Guidelines and Digital Media Ethics Code\) Rules, 2021](#).
- GAC aims to ensure a Safe, trusted and accountable internet for Indian users.
- So far, 3 such bodies have been constituted comprising of professionals from various fields.

- **Composition** - The GAC is a 3-member committee.
- It consists of a chairperson and 2 whole-time members appointed by the Central Government.
- In which one will be a member ex-officio and two will be independent members.
- **Process** - The users may file their appeal through the GAC's [online platform](#).
- The users can also track their appeal through the appellant login window in the platform.
- GACs can also be accessible through the Common Service Centres (CSCs).
- **Function** - The GAC deals with the appeals of users aggrieved by decisions of Grievance Officers of social media intermediaries and other intermediaries.
- All the decisions of GAC will be uploaded on website and accessible to the public.
- **Duration** - The users can file an appeal with the GACs within a period of 30 days from the date of receipt of communication from the intermediary's Grievance Officer.
- This Committee will subsequently endeavour to address the user's appeal within a period of 30 days.

OTHERS

Lewis Super Acids

Researchers at the Paderborn University, Germany have been able to make a unique class of catalysts called "Lewis super-acids".

- 'Lewis super-acids are derived from Lewis acids, named after the chemist, G N Lewis.
- Lewis super-acids' are used as catalysts in chemistry to accelerate reactions.
- These are compounds that add electron pairs.
- These can be used to break strong chemical bonds and speed up reactions.
- These are highly reactive reagents, thus difficult to produce and use.
- **Significance** - It enables non-biodegradable fluorinated hydrocarbons (similar to Teflon) to be converted back into sustainable chemicals.
- It can possibly even convert climate-damaging greenhouse gases, such as sulphur hexafluoride into sustainable ones.

Lewis acid and Lewis base

Lewis acid	Lewis base
An electron-pair acceptor	An electron-pair donor
Substances such as a Hydrogen ion (H ⁺)	Substances such as the hydroxide (OH ⁻) ion

Fluorescence Microscopy

Researchers at Winona State University, have created a design for a 'glowscope', a device that could democratise access to fluorescence microscopy.

An optical microscope views an object by studying how it absorbs, reflects or scatters visible light.

- **Principle** - A fluorescence microscope views an object by studying how it reemits light that it has absorbed, i.e. how it fluoresces.
- **Working** - The object is infused with fluorophores before being placed under the microscope.
- The object is illuminated with light of a specific wavelength.
- Fluorophores are particles in the object that absorb this light and reemit it at a higher wavelength (i.e. different colour).
- Different fluorophores are used to identify and study different microscopic entities.

- **Advantages** - A fluorescent microscope can track fluorophores as they move inside the object, revealing the object's internal shape and other characteristics.
- Affordable for students as well as researchers in resource-poor labs.
- A glowscope requires access to fluorophores, clip-on macro lens, LED flash lights and lighting filters.
- **Different versions** - epifluorescence and confocal laser-scanning microscopes.

Foldscope - The Foldscope is a handheld microscope made mostly of paper. (costs around Rs 400)

It has a magnification of around 140x and can identify objects just 2 micrometres wide.

It was created by researchers at Stanford University in 2014.

Researchers from the Indian Institute of Science (IISc), Bengaluru, have found that a foldscope that can be easily linked to a smartphone camera

Capillary Action

NASA has come up with a space cup that will help astronauts drink liquids just like we do here on Earth.

- **Liquid under zero gravity** - In a near zero-gravity environment, like on the International Space Station, liquids behave very differently.
- The lack of gravity causes them to float around in blobs that are difficult to handle.
- They do not really settle down into cups and makes it very difficult to drink.
- **NASA's Capillary Cup** - NASA has designed a super cup to drink liquids in space for astronauts.
- The cup functions based on combination of surface tension, wetting and cup geometry to keep the liquids in place.
- The porcelain ceramic version of the cup was designed on the International Space Station.
- It is the first patented product invented in orbit.
- **Capillary action** - It is the movement or flow of liquid through a narrow tube using surface tension.
- It occurs when the adhesion between liquid and solid is greater than the cohesion of the fluid.
- The narrower the tube, the capillary action is also more.

MATSYA-6000

India's indigenous manned submersible 'MATSYA-6000' plunges into the bowels of the Indian Ocean.

- The Indian Government launched the [Samudrayaan Mission](#) in 2021 and MATSYA is the vehicle designed for this mission.
- MATSYA-6000 is a manned submersible vehicle developed indigenously.
- It is a 6000 m depth-rated Remotely Operated Vehicle (ROV).
- It was designed and developed by National Institute of Ocean Technology (NIOT), Chennai under Ministry of Earth Sciences (MoES).
- The submersible can on-board a 3-person crew and dive deep at 6,000 metres.
- It has an endurance of 12 hours under normal operation and 96 hours in case of emergency for human safety.

Quick Facts

The success of Samudrayaan mission will put India one among 6 countries to have piloted a crewed under-sea expedition beyond 5,000 metres.

India and CIOB

- The [International Seabed Authority](#) has allocated about 75,0000 square kilometres in the [Central Indian Ocean Basin](#) (CIOB) to conduct exploratory mining.
- Preliminary estimates indicate that 380 million tonnes of polymetallic nodules lie on the seabed (CIOB).
- The Union Cabinet in 2022 approved Rs 4,000 crore for '[Deep Ocean Mission](#)' to be piloted by the Ministry of Earth Sciences.
- India has also committed to the [High Seas treaty](#) that seeks to protect 30% of the world's ocean by 2030.

- The treaty seeks to conserve marine environments and regulate mining and commercial prospecting in the high seas, or parts of the ocean that are beyond the zone where a country has exclusive operating rights.
- CIOB is also part of the high seas, which encompass about two-thirds of the earth's oceans.

Daylight Saving Time

Lebanon saw mass confusion after its government decided to delay Daylight Saving Time (DST) by a month.

- Daylight Saving Time (DST) is the practice of setting the clocks forward one hour from the standard time during the summer and back again in the autumn.
- This practice is done to make better use of natural daylight.
- **Northern Hemisphere** - Many countries in the Northern Hemisphere use DST in the summer time, but not all.
- Daylight Saving Time usually starts in March-April and ends in September-November when the countries return to standard time, or winter time.
- **India** does not follow daylight saving time as countries near the Equator do not experience high variations in daytime hours between seasons.
- **Southern Hemisphere** - In the Southern Hemisphere the participating countries usually start the DST period in September-November and end DST in March-April.
- **History** - For the first time in the world, the town of Thunder Bay in Ontario, Canada implemented DST in 1908.
- Germany started following DST since 1916 and became the first country in the world to use DST on a national level.

Piezoelectric Effect

Scientists have reported evidence of the piezoelectric effect in liquids, for the first time.

- Piezoelectric effect was found in 2 pure ionic liquids (i.e. liquids made of ions instead of molecules) at room temperature.
- The liquids also displayed the inverse piezoelectric effect: they became distorted when an electric charge was applied.
- **Piezoelectric effect** - It is a phenomenon where specific types of material produce an electric charge proportional to the mechanical stress applied to them.
- The piezoelectric effect was discovered in 1880, in quartz.
- Quartz, topaz, etc. are few examples of piezoelectric crystals.
- **Applications** - Such crystals are used in cigarette lighters, electric guitars, TV remote controls, audio transducer.
- Quartz is the most famous piezoelectric crystal which is used in this capacity in analog wristwatches and clocks.

24. INDEX AND REPORT

Methane Global Tracker Report

The International Energy Agency (IEA) released their annual Methane Global Tracker Report.

- According to the [International Energy Agency's](#) (IEA) **annual** Methane Global Tracker report, the fossil fuel companies have done almost nothing to curb the emissions despite their pledge to do so.
- The report shows that some progress is being made but that emissions are still far too high and not falling fast enough.
- But fossil fuel companies failed to take any substantial action regarding the issue.

DID YOU KNOW?

The fossil fuel companies emitted 120 million metric tonnes of methane into the atmosphere in 2022, only slightly below the record highs seen in 2019.

- **Findings** - The energy sector accounts for around 40% of the total average methane emissions from human activity.
- More than 260 billion cubic metres (bcm) of natural gas (mostly composed of methane) is wasted through flaring and methane leaks globally.
- 80% of the available options to curb the release of methane could be implemented by the fossil fuel industry at net zero cost.
- Ultimately, reducing 75% of the wastage of natural gas could lower global temperature rise by nearly 0.1 degree Celsius by mid-century.
- **Methane** - Methane (CH₄) is a hydrocarbon.
- Methane is a greenhouse gas, which is responsible for 30% of the warming since preindustrial times, second only to carbon dioxide.
- Methane is 80 times more potent at warming than carbon dioxide.
- Carbon dioxide remains in the atmosphere for much longer than methane, but methane is roughly 25 times more powerful at trapping heat in the atmosphere.
- Methane cuts are among the cheapest options to limit near-term global warming.

Landslide Atlas of India

The Indian Space Research Organisation (ISRO) has released the *Landslide Atlas of India*, a detailed guide identifying landslide hotspots in the country.

- **Landslides** - A sudden movement of rock, boulders, earth or debris down a slope is termed as a landslide.
- They are natural disasters occurring mainly in mountainous terrains where there are conducive conditions of soil, rock, geology and slope.

Types of flows

Debris flow: It is a form of rapid mass movement in which a combination of loose soil, rock, organic matter, slurry that flows downslope. They are commonly caused by intense precipitation or rapid snow melt.

Earth flow: It is down slope viscous flow of fine grained material saturated with water.

Mudflow: A mudflow is wet or viscous fluid mass of fine and coarse grained material flows rapidly along drainage channels.

Creep: Creep is the slow, steady, downward movement of material under gravity occurs in large area.

Lateral Spreads: It is the lateral movement usually occur on very gentle slopes or flat terrain. The failure is caused by liquefaction due to earthquake.

Types of Movement

Falls: Falls are rapid movements of rocks and boulders detached from steep slopes or cliffs along fractures, joints, and bedding planes.

Topple: It is the forward rotation of a mass of debris or rock out of a slope. The slope failure generally occurs at point near the base of the block of rock.

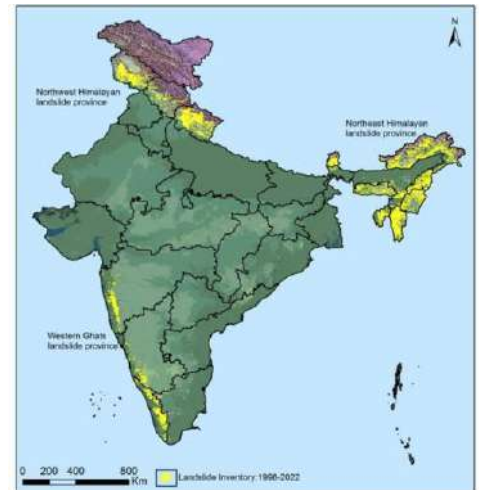
Slides: A slide is a downslope movement of material that occurs along a slip surface.

Rotational slide: In this slide the slide movement is roughly rotational about an axis which is parallel to the ground surface and transverse across the slide.

Translational slide: In this slide the landslide mass moves along a planar surface with rotation or backward tilting

- **Causes**
 1. Natural causes - includes heavy rainfall, earthquakes, snow-melting and undercutting of slopes due to flooding.
 2. Anthropogenic causes - activities such as excavation, cutting of hills and trees, excessive infrastructure development, and overgrazing by cattle.

- **Factors of influence** - lithology, geological structures like faults, hill slopes, drainage, geomorphology, land use and land cover, soil texture and depth, and weathering of rocks.
- **Landslide Atlas of India** - ISRO's National Remote Sensing Centre (NRSC), Hyderabad, has created 'Landslide Atlas of India'.
- It is a database of landslide-prone regions of India based on events during 1998 – 2022, primarily along the Himalayas and the Western Ghats.
- India is among the top 4 countries with highest landslide risk, where for every year the estimated loss of life per 100 km² is greater than one.
- Excluding snow covered areas, approximately 12.6% of the country's geographical land area (0.42 million sq. km) is prone to landslides.
- **Database and analysis** - The pan-India landslide database classifies landslides into – seasonal (2014, 2017 monsoon seasons), event-based and route-based (2000 – 2017).
- The NRSC carried out Landslide exposure analysis in the mountainous areas for their exposure to landslides in terms of key socio economic parameters in 17 states and 2 UTs of India.
- **Mizoram** recorded 12,385 landslide events highest number of landslide events in the past 25 years.
- **Rudrapur** in Uttarakhand has the highest landslide density and topped the list of all 147 districts in 17 states and 2 UTs.
- Department of Space had also undertaken the preparation of Landslide Susceptibility Zonation (LSZ) and Management maps in the Himalayas of Uttarakhand and Himachal Pradesh states.
- The inventory database of landslides is available in a web GIS platform in the Bhuvan portal.



“According to the Statement of Climate of India 2022 released by the India Meteorological Department, heavy rain, floods and landslides claimed 835 lives in the country in 2022”

World Happiness Report 2023

On the occasion of 'International Day of Happiness', annually observed on March 20, 'World Happiness Report' unveiled its 11th edition this year.

- The World Happiness Report is based on people's own assessment of their happiness, as well as economic and social data.
- It was first published in 2012 and published annually since then. 2023 report is its 11th edition.
- The report is published by the United Nations Sustainable Development Solutions Network (UN-SDSN).
- The report considers 6 key factors: social support, income, health, freedom, generosity, and absence of corruption.
- It assigns a happiness score based on an average of data over a 3-year period.
- **2023 Rankings** - The 2023 report ranked 137 countries on the list.
- For the 6th year running, Finland was named the world's happiest country followed by Denmark and Iceland.
- Israel occupied fourth position, up 5 spots from last year.
- **Unhappiest:** War-scarred Afghanistan has occupied the bottom spot (137th) on the table since 2020.
- Its humanitarian crisis deepen since the Taliban government took power in 2021 following the US-led military pull-out.
- **Ukraine:** Ukraine's ranking improved from 98 to 92 this year, despite the Russian invasion.
- But Ukraine's overall score fell from 5.084 to 5.071, on a scale of zero to 10.
- **India:** India was ranked 126th on the report (136th in 2022).
- **India's Neighbours:** Nepal featured at 78, China at 64, Bangladesh at 118 and Sri Lanka at 112 and Pakistan at 108.
