INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

GREAT SEAHORSE

Extensive fishing off the Coromandel coast could be forcing the great seahorse (Hippocampus kelloggi) to migrate toward Odisha.

6 MARCH - 11 MARCH 2023

WEEKLY CURRENT AFFAIRS

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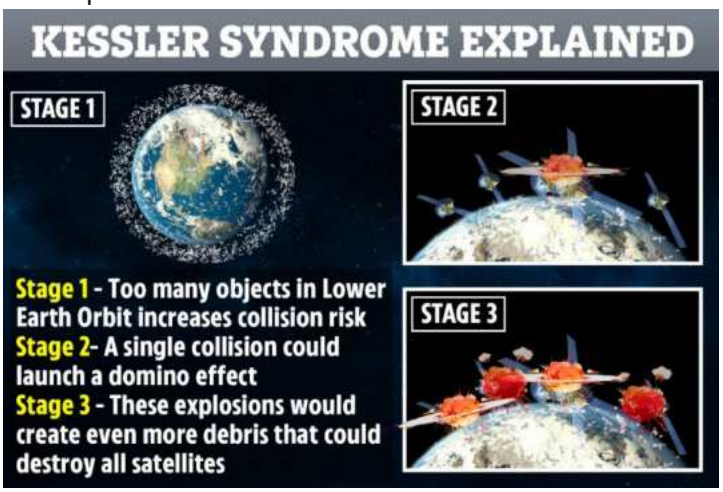

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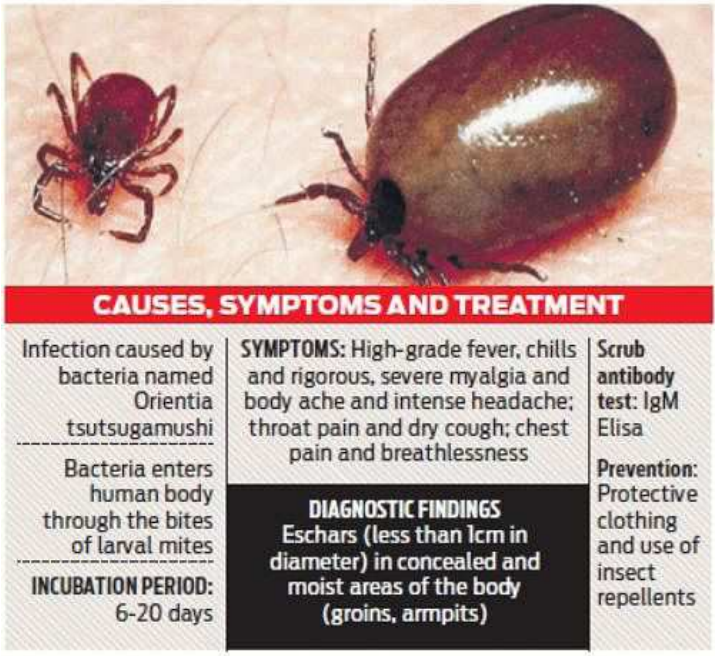

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CONTENT FOR MAINS ENRICHMENT (ETHICS/ESSAY):

GS1

Role of women and related issues

DIFFERENT PHASES OF THE INDIAN WOMEN'S MOVEMENT

Context:

The Indian women's movement is well-known for its vibrancy, but there has been less attention on the movement's gradual transformation.

A timeline of the Evolution of the Indian women's movement:

- **Nationalist/political movements:**
  - **Examples**: All India Women's Conference (1927) → salt satyagraha (1930) → Quit India movement (1942).
  - Acceptance of women's leadership in politics, setting the stage for grass-roots mobilisation, and increased participation in electoral politics.
- **Rights-based, civil society movements:**
  - **Examples**: Chipko (the 1970s) - one of the earliest **ecofeminist movements** in the world → SEWA → Nirbhaya, Shaheen Bagh and Sabarimala protests.
  - Grassroots organising for legal and policy reforms, against persistent patriarchal institutions.
- **State-led movements for political/economic empowerment:**
  - The greatest success of this mobilisation -
    - **The 73rd Amendment to the Constitution was passed, reserving 1/3rd of seats in panchayats for women**
    - **17th Lok Sabha inducted 78 women as MPs - the most in the country's history.**
  - Govt. invested heavily in Self Help Groups **(SHGs)**, which function mainly as thrift and credit institutions.
    - **Today, there are about 1.2 crore SHGs in India, most of which are all women.**

Nature of these movements: Some aimed to alter political discourse while remaining outside of party politics, while some were **clearly associated with political parties**.

Impact of these movements:

- **Transformed Indian women:** From **abala (weak) → sabala (strong)**
- Feminist advocacy/women's collectives -
  - **Highlighted sex-selective abortion and discrimination in inheritance patterns leading to legal reforms.**
  - **Worked hard to reform and implement laws against sexual harassment in the workplace and in public spaces.**
- Initiatives for empowering women:
- **Mahila Samkhya** (older programme replaced by SHGs): Explicitly designed to mobilise women and sensitise them about their rights → relative **ineffectiveness in enhancing vocational skills and entrepreneurship.**
- National Rural Livelihood Mission **(NRLM):** The above deficiency was addressed by the current generation of the SHG movement + NRLM.
- **Participation in SHGs:** Reliance on high-interest loans from moneylenders has declined. Overall socio-economic empowerment also facilitates SHGs to help meet national targets under
  - **SDG 5 (gender equality),**
  - **SDG 16 (peace, justice and strong institutions) and**
  - **SDG 17 (partnerships for the goals).**
- MGNREGA**:** SHGs under the NRLM have been able to use funds under MGNREGA to build income-earning assets for women, such as cattle sheds and poultry sheds.

Challenges:

- The SHG movement's potential for enhancing women's incomes has been underutilised.
- Most of the activities of SHGs are limited to **micro-credit.**
- Limited evidence of increased incomes due to entrepreneurship or women's empowerment within the household.
- Sometimes SHGs have been used as **a political weapon by ruling governments.** For example, the use of SHG women in Kerala during the Sabarimala protests.

Way ahead - Developing synergies: massive mobilisation of women must be supported with other complementary **programmes that provide enhanced livelihood opportunities.**

Some best practices of the SHG movement in India:

- **The rani mistris (women masons) of Jharkhand** built toilets, providing women with opportunities to diversify their livelihoods for improved incomes and socio-economic growth.
- **Bank sakhis, pashu sakhis, poshan sakhis:** The ES 2022-23 points to the empowerment of nearly **0.4 million SHG members** through training programmes to transform them into community resource persons.

Conclusion:

The key, however, is to not put all eggs in the single basket of state-led programmes and to ensure that other spaces for women's activism are preserved.

Insta Links: The importance of women-led digital solutions

Mains Links:

Q. 'Women's movement in India has not addressed the issues of women of lower social strata.' Substantiate your view. (UPSC 2018)

INDIA NOT ON-TARGET IN MANY WOMEN-RELATED DEVELOPMENT GOALS

Context:

A recent analysis (in The Lancet) has concluded that India is not on-target to achieve 19 of the 33 SDGs indicators.

Background:

- The SDGs were adopted by the UN in **2015** with a vision to achieve a better and more sustainable future for all.
- India is **one of the signatory countries** that has committed to achieving these goals by **2030**.

Achievements:

The 5 indicators with the highest number of districts that **have met the target** area -

- Adolescent pregnancy
- Multidimensional poverty
- Electricity access
- Bank accounts
- Improved sanitation
- Full vaccination
- Internet use
- Skilled birth attendants

The critical off-target indicators:

- Access to basic services
- Wasting and overweight children
- Anaemia
- Child marriage
- Domestic violence
- Tobacco use
- Modern contraceptive use

Worst performer: More than 75% of the 707 districts analysed were off-target, concentrated in the States of **MP, Chhattisgarh, Jharkhand, Bihar, and Odisha**

Focus areas of 2023 International Women's Day (March 8):

- The 2023 IWD was commemorated under the theme **"DigitALL: Innovation and technology for gender equality".**
- However, women's lack of access to technology and digital tools makes them less likely to be a part of the wider domains of Science, Technolo-

gy, Engineering and Mathematics **(STEM) fields.**

- **Globally**, 18% of girls in higher-level education are pursuing STEM studies, compared with 35% of boys.

Case of India - The gender gap in STEM:

- According to the All India Survey of Higher Education (2020-2021), in UG, PG, MPhil and PhD **engineering** programmes, 71% of enrolled students were males and **29% were females.**
- But of all students enrolled in **science** courses at UG, PG, MPhil and PhD levels, **women at 53%** of enrolment outnumbered men.

Why does the gap exist?

- Presence of existing resources such as mentors and programmes offering scholarships
- General **societal attitudes** on women's education
- **Gender bias in curricula**. In India, more than 50% of illustrations in math and science textbooks show boys and only 6% show illustrations of girls.

Recent initiatives/achievements by/of the GoI:

- To mark the IWD 2023, the Union Ministry of Science & Technology announced **an exclusive women's portal** for research grants and funds under **CSIR-ASPIRE**.
- 68% of 2 crore **PM Awas-Gramin** beneficiaries are women and over 23 crore **MUDRA loans** have been granted to women beneficiaries.
- For the first time, **sex ratio in India** has improved to 1,020 women per 1,000 men (NFHS-5).
- **Permanent Commission for Women** in the Armed Forces. Over **10,000 Women Officers** are currently serving in the Armed Forces, the majority in the Medical Services.
- Group Captain **Shaliza Dhami** - the first woman officer to command a missile squadron in the Western sector facing Pakistan.

Insta Links: Different faces of the Indian women's movement

Mains Links:

Q. Discuss the desirability of greater representation to women in the higher judiciary to ensure diversity, equity, and inclusiveness. (UPSC 2021)

Geophysical phenomena

LANDSLIDE ATLAS OF INDIA

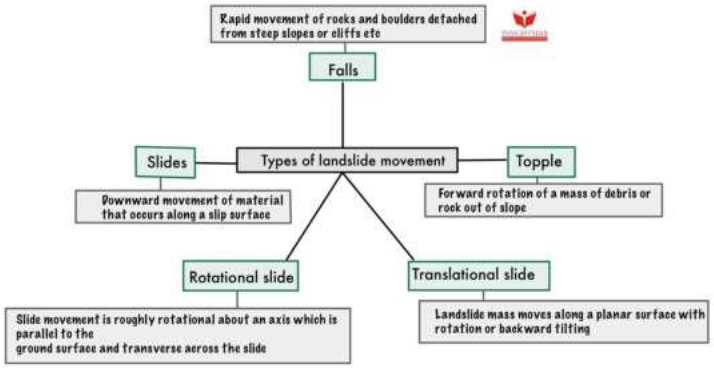
Context:

All 12 districts of Himachal Pradesh have **figured on a list prepared by the National Remote Sensing Centre (NRSC**) of locations prone **to landslides.**

- The **Landslide Atlas** of India was released by **Indian Space Research Organization (ISRO**) at the "**National Meet on Disaster Risk Management — Trends & Technologies**", Hyderabad.
- The **NRSC, one of the centers of ISRO, manages data from aerial and satellite sources.**

About Landslide:

- A landslide is **"a movement of a mass of rock, earth or debris down a slope".**



Types of flows

- **Debris flows**: It is a form of rapid mass movement in which a combination of loose soil, rock, organic matter, and slurry that flows downslope. They are commonly caused by intense precipitation or rapid snowmelt.
- **Earth flow:** It is a down-slope viscous flow of fine-grained material saturated with water.
- **Mudflow:** A mudflow is a wet or viscous fluid mass of fine and coarse-grained material that flows rapidly along drainage channels.
- **Creep:** Creep is the **slow, steady, downward movement of material** under gravity that occurs in a large area

Key Findings:

- India is among the **top four countries with the highest landslide risk**, where every year the es-

timated loss of **life per 100 km is greater than one.**

- This Atlas provides risk assessment in **landslide locations during the period of 1998-2022 and covers vulnerable regions in 17 states and 02 UTs of India** in the Himalayas and Western Ghats.
- Northwest **Himalayas contribute 66.5% of landslides in India**, followed by Northeast Himalayas (**18.8%) and Western Ghats (14.7%).**
- Top 5 districts based on their exposure to landslide**: Rudraprayag and Tehri Garhwal (Uttarakhand), Thrissur (Kerala), Rajouri (J&K), and Palakkad (Kerala)**
- The database includes three types of landslide inventory – **seasonal, event-based, and routewise.**

About NRSC:

National Remote Sensing Centre (NRSC) has the **mandate for the establishment of ground stations for receiving satellite data, generation of data products, dissemination to the users, development of techniques for remote sensing applications including disaster management support**, geospatial services for good governance and capacity building for professionals, faculty, and students.

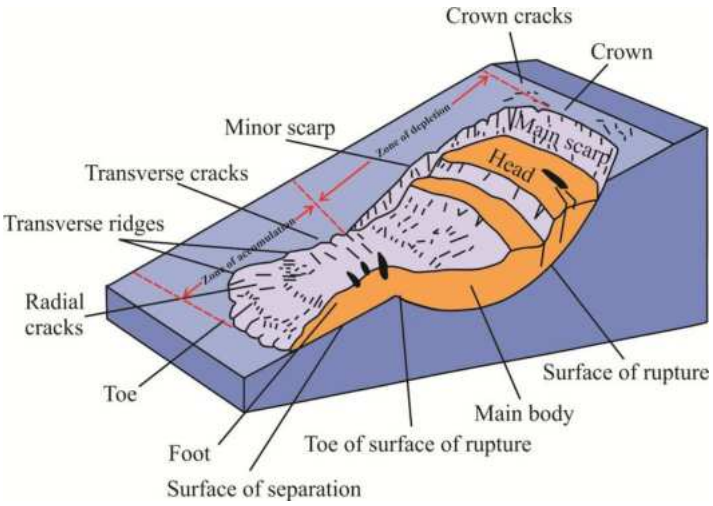


Fig: Features of landslide

Insta Links: Landslides in India (Mindmap)

Mains Link:

Q. Disaster preparedness is the first step in any disaster management process. Explain how hazard zonation mapping will help disaster mitigation in the case of landslides UPSC 2019

Q. Differentiate the causes of landslides in the Himalayan region and Western Ghats (UPSC 2021)

EVEN WITH 'MODERATE EMISSIONS', INDIA'S HEAT IS SET TO GET WORSE

Context:

The climate crisis is no longer a distant event that might happen in the future.

Indications of the impending climate crisis:

- Temperatures are rising, rainfall patterns are shifting, and **extreme events such as record-high temperatures**, etc.
- **For example,** the month of February (2023) in India was the hottest since 1901.
- According to a 2021 study, **more than five million people died** (between 2000-2019) on an average each year worldwide because of extreme temperatures.
- **The IPCC 6th Assessment Report** states that **extreme heat events will grow** with increasing global warming.

The case of India:

- A study shows that the temperature in India has been **steadily increasing during both summer and winter.**
- The recorded increase in maximum and minimum temperature over 30 year is up to **0.9º C and 0.5º C**, respectively.

Impact of increasing heat:

- A cause of suffering and **death** in extreme cases.
- It undermines systems such as **agriculture and other climate-sensitive sectors** that support the livelihoods and well-being of people.

Climate projections for the districts of India (2021-2050):

- **The summer maximum temperature will increase** (between 2º C - 3.5º C) even under a 'moderate emissions' scenario.

- **Even winter minimum temperatures are projected to increase** in the future.
- **The diurnal temperature range** (DTR - variation between high and low air temperature during a single day) is also changing.
- This will, in turn, increase the risk of **heat stress** → drought, deteriorating soil quality, crop failure, job loss, higher migration, morbidity, and mortality → can affect ecological systems, and the carbon economy.
- According to a 2019 ILO report, India is expected **to lose 5.8% of working hours in 2030 due to heat stress.**

Way ahead:

- Implement the **Sendai Framework for Disaster Risk Reduction** through improved **early warning systems, public awareness, and formulation of heat action plans.**
- Prepare **district-level heat hotspot maps** to design long-term measures to reduce deaths due to extreme heat.

Best practices: Innovative strategies such as -

- Emergency cooling centres (similar to the ones in Toronto and Paris);
- **Survival guides** that are strategically displayed to survive extreme heat or heat waves (like in Athens);
- **White roofs** (Los Angeles);
- Green rooftops (Rotterdam);
- Self-shading tower blocks (Abu Dhabi); and
- Green corridors (Medellin).

Related news:

PM chairs high-level meet to review preparedness for hot weather conditions this summer

Context:

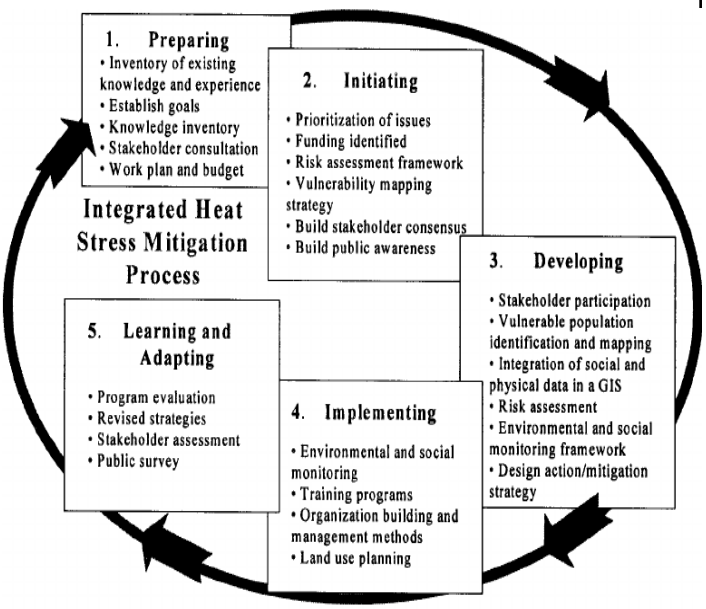
The PM of India called for preparing **separate awareness material for different stakeholders** like common citizens, medical professionals, local body authorities, and disaster response teams.

PM asked:

- The FCI is to take measures to ensure optimal storage of grains in extreme weather conditions.
- The IMD prepares **daily weather forecasts** which makes predictions easy to interpret and disseminate.
- For detailed fire audits of all hospitals.

Heat Wave:

- A heat wave is a period of **abnormally high temperatures**, more than the normal maximum temperature that occurs during the summer season in the NW parts of India.
- Heat waves **typically occur between March and June**.
- According to the IMD, heat waves need not be considered till the maximum temperature of a station reaches **at least 40°C for Plains and at least 30°C for Hilly regions.**



Insta Links: Heat Waves and Climate Change

FOREST FIRE FACTS: FSI

Context:

Forest fires continued to remain unabated in Odisha after the state recorded 542 such cases in the last seven days making it the highest among all states in the country.

Forest fires in India:

Causes of a Forest fire:

- **Natural:** Such as **lightning**, high atmospheric temperatures, and dryness (low humidity) offer favourable circumstances.
- **Man-made:** When a source of fire like naked flame, cigarette, or bidi comes into contact with inflammable material.

Types of a forest fire:

- **Surface fire:** Spread along the surface litter (leaves, twigs, dry grasses) on the forest floor.
- **Ground fire**: Fires in the **subsurface organic fuels**, such as duff layers under forest stands, burn **underneath** and are often ignited by surface fires.
- **Crown fire**: A crown fire is one in which the crown of trees and shrubs burn, often sustained by a surface fire.

Good/bad:

- **Helps in the evolution of forests** (such as dry deciduous forests and savannahs)**,**
- **Landscape/disease management** (indigenous people like the Soligas have used controlled forest fires to reduce incidences of tick-borne diseases),
- Controls the growth of **invasive species, etc.**
- However, forest fires can have **lasting negative impacts on biodiversity** (loss of flora, fauna, ecological services), the **economic stability** of many communities that live in forests, etc.

Vulnerability:

- **~65%** of Indian forests are prone to occasional/ frequent forest fire events.
- **Odisha, Madhya Pradesh, and Chhattisgarh** were the most impacted states and **Gadchiroli, Kandhamal, and Bijapur** were the most impacted districts.
- The youngest mountain ranges of the **Himalayas**/chirr (Pine) forests (Western > Eastern as E. Himalayas grow in high rain density) are the most vulnerable stretches of the world.
- There has been a **10-fold increase** in forest fire incidences in the last two decades.
- According to the MoEFCC, the country **reported 3,45,989 forest fire** incidents during (Nov 2020 and June 2021) and the state of Odisha reported 51,968 - the highest in India.

Impact of climate change:

- It might lead to more wildfire-inducing '**hot lightning**' strikes.
  - **Hot lightning or long continuing current strikes (which can last up to a third of a second) are more likely to ignite wildfires than typical lightning strikes.**

Preparedness and mitigation measures:

Forest fires are usually **seasonal**. Hence, fires can be prevented in the summer -

- Through the removal of forest litter all along the forest boundary ("**Forest Fire Line**").
- **By creating firebreaks**/ ditches in the forests.
- **The FSI is using satellite imaging technology** -
  - **To set up fire alert systems (MODIS, SNPP) and analyse fire-affected forest areas**
  - **To better understand the ecology of forest fires for restoration and fire prevention efforts**

Related topic: Landfill fires

Context: Landfill fires are becoming a big challenge for India's urban civic bodies (recently in Kochi)

Recent incidents: Ghazipur, Delhi's Bhalswa, and Chennai's Perungudi

What triggers landfill fires?

- A landfill site is **a site for the disposal of waste materials** and is the **oldest and most common** form of waste disposal.
- The landfill sites in India are **not scientifically planned**.
- The wastes are **not segregated** due to which the landfill sites receive mixed wastes which **include organic waste/ignitable material/ plastics**.
- **The anaerobic decomposition** (breakdown of organic waste in the absence of oxygen) generates **methane gas and heat**.
- As soon as the methane gas comes in contact with oxygen, the combustible materials at the dumping site catch fire easily.

Challenges: The landfill fires take time to exhaust due to several factors which include -

- **Multiple ignition points,**
- **Lack of constant water supply** and
- The danger involved in climbing the tall mounds of garbage.

Way ahead: The Solid Waste Management Rules 2016 state that **only non-recyclable, non-biodegradable, and non-combustible waste** should go to a sanitary landfill.

Insta Links: Forest fires

GS2

Local Government

HISTORY, POWERS OF THE STATE'S LOKAYUKTA

Context:

The Lokayukta **has seized over Rs 8 crore of unaccounted cash** from the residence and office of an MLA, who was serving as the **chairperson of the Public Sector Undertaking (PSU) Karnataka Soaps and Detergents Ltd (KS&DL).**

- A bribery case filed under Section **7 (a) (b) (public servant taking gratification other than legal remuneration in respect of an official act) of the** Prevention of Corruption Act.

About Lokayukta	Lokayukta is an **anti-corruption authority or ombudsman** appointed by the state government to **investigate complaints of corruption and maladministration** against public servants and elected representatives.
Statutory body	Lokayuktas are the state equivalents of the central Lokpal, as per the provisions of the Lokpal and Lokayuktas Act, 2013. **Section 63 of the Lokpal and Lokayuktas Act, 2013** mandates that every state shall establish a body known as Lokayukta.
Composition	The Lokayukta should consist of a maximum of **eight members, of which:** • **50% shall be judicial members, and** • **at least 50% should belong to the SCs, STs, OBCs, minorities, or women.**
Powers:	The Lokayukta can: • Investigate complaints against **public servants, ministers, and elected representatives at the state level.** • **Recommend disciplinary action, including removal from office or prosecution, against a public servant, found guilty of corruption or maladministration.** • Recommend changes to **policies and procedures to prevent corruption and maladministration.**

A timeline of the "Lokayukta" in Karnataka

- **The Karnataka Lokayukta Act, 1984** came into force in 1986, and was passed with the objective of **improving the standards of public administration**, by looking into complaints against **administrative actions, including cases of corruption, favoritism and official indiscipline in the administrative machinery.**

- In 2016, **an Anti-Corruption Bureau (ACB)** was created which issued subsequent notifications transferring the **power to probe corruption cases under the Prevention of Corruption Act, 1988, from Karnataka Lokayukta police to the ACB.**
- However, in 2022, a **division bench of the Karnataka High Court** in "**Chidananda Urs B.G vs The State of Karnataka"** ordered the **abolishing of ACB and the revival of an anti-corruption police unit** attached to the Karnataka Lokayukta, a **quasi-judicial institution that works independent of the state**. Since then, the Karnataka Lokayukta's powers have been restored.

Insta Links:

Maharashtra passes Lokayukta Bill that brings CM under the ambit of the anti-corruption body

Mains Link:

Q. 'A national Lokpal, however strong it may be, cannot resolve the problems of immorality in public affairs.' Discuss. UPSC 2019

Parliament

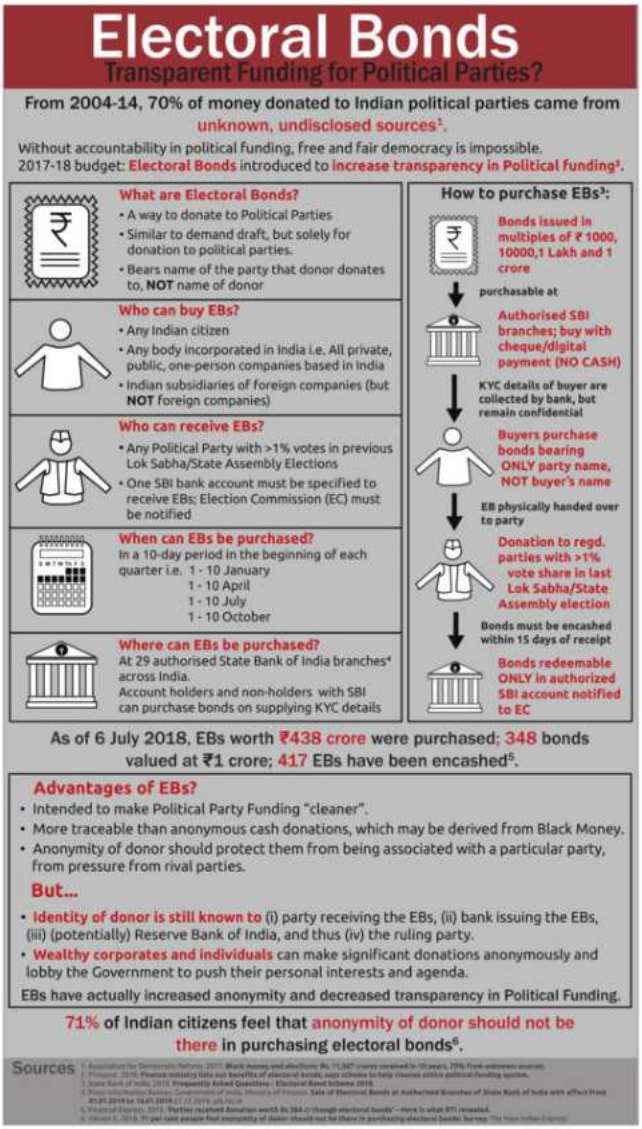
WHAT DOES IT TAKE TO BUY AN ELECTORAL BOND?

Context:

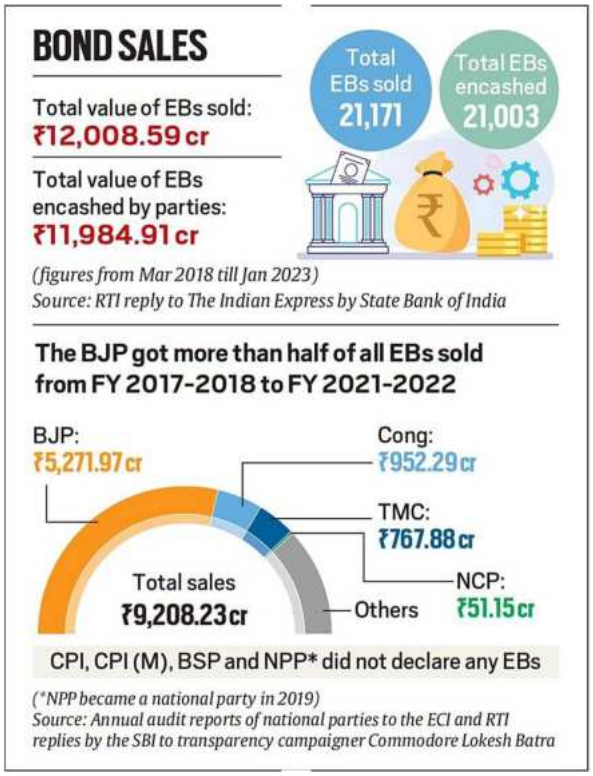
Five years ago, the sale window for the first tranche of Electoral Bonds was opened in March 2018.

Introduction of Electoral bonds:

- The Electoral Bond Scheme (EBS), announced in the 2017 Union Budget, was notified by the Central Government in **2018**.
- These bonds **can be purchased from select SBI branches** by any Indian person or corporation incorporated in India.



Performance of EBS:



Concerns related to the operation of EBS:

- New type of anonymity -
  - **Reduced public and legislative oversight. For example, only the ruling party via the SBI has a full account of all donations.**
  - **Non-disclosure of electoral bond donors by political parties. The only requirement is the annual audit reports with all donations received via electoral bonds.**
- **Impact of anonymity:** Dilutes one voter-one vote principle, an undue advantage to the ruling party, etc.

Way ahead:

- In 2021, the SC refused to stay the sale of electoral bonds and **suggested bringing in more transparency.**
- The information regarding donors and donations **should be accessible to the Parliament, the Election Commission of India and the Opposition via SBI.**
- **The RTI must be strengthened**.
- Ex-CEC (OP Rawat) suggests that the political funding scheme could be improved by appointing an "**independent watchdog**".

Best practice: Jharkhand Mukti Morcha recently disclosed the identities of EB donors - the first political party to do so

Insta Links:

The need to have full disclosure of electoral bonds and political funding

Mains Links:

Q. Do you think that setting up an "independent watchdog" to oversee the electoral bond system will ensure the much-needed transparency and accountability in the electoral bond scheme? Critically analyse.

Welfare schemes for vulnerable sections

THE IMPORTANCE OF WOMEN-LED DIGITAL SOLUTIONS

Context:

The theme for International Women's Day 2023 is '**DigitALL: Innovation and Technology for Gender Equality.**

Data on Digital Disparity:

- According to **a UNICEF report, as many as 90% of the jobs** in the world today have **a digital component.** These jobs, however, are available only to the **digitally able, and to more men than women.**
- According to the report, **in developing countries, only 41% of women have access to the internet compared with 53% of men**.
  - **Women are 20% less likely to own a smartphone and are more likely to borrow phones from a male family member.**
- Another report by the Organization for Economic Cooperation and Development revealed that the **gender gap in internet use is widening**. Software development remains a male-dominated field, with women comprising **only 15% of software designers**.

Examples of how digital literacy helps in tackling issues:

- The **FoSafMDM application** by the **United Nations World Food Programme (WFP)** in partnership with the **Governments of Odisha and Rajasthan has rolled out technology-based training modules**
- This helps in **strengthening the capacity of the community** in ensuring that proper hygiene and safety measures **are followed so that children reap the full benefits of the nutrition that these school meals offer.**
- Young women known as '**Digital Sakhis' from Madhya Pradesh are upturning discriminatory social norms using smartphones**.

Indian situation:

- India accounts for **half the world's gendered digital divide** given that **only a third of all Internet users in the country are women.**
- In Asia-Pacific**, India has the widest gender gap of 40%. Less than 32% of women in India own a mobile phone compared to over 60% of men.**

Conclusion:

- Women can harness digital tools for improving nutrition schemes and initiatives, while also us-

ing them to **create economic opportunities that ensure long-term food and nutrition security**.

- **Women20—the G20's official engagement platform** to promote gender equity—**identifies "bridging the gender digital divide"** as one of its five priorities that need to be mainstreamed as part of the G20 agenda this year.

Insta Links:

Consequences of the growing digital divide

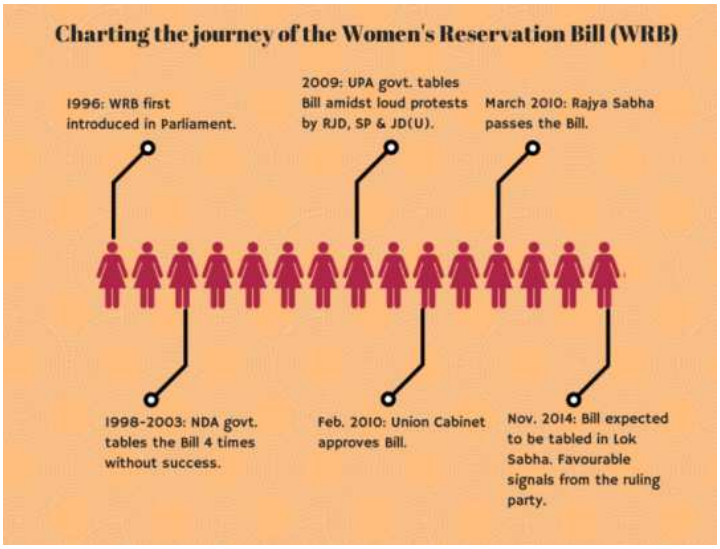
WOMEN'S RESERVATION BILL: HISTORY, POLITICS BEHIND LONG-PENDING LAW

Context:

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

Women's Reservation Bill **(WRB)**

- The Bill will reserve **one-third of the total number of seats** in state Assemblies and Parliament for women.
- It was first introduced in **1996** and was referred to a **Joint Parliamentary Committee** (chaired by Geeta Mukherjee), which recommended -
  - **Reservation for a period of 15 years;**
  - **Including reservation in cases where the state has less than three seats in LS;**
  - **Including reservation for the Delhi assembly; and**
  - **Changing "not less than one-third" to "as nearly as may be, one-third", etc.**
- Two recommendations, which became **major sticking points** -
  - **Regarding reservation for OBC women (quota within a quota)**
  - **Reservation for women in the Rajya Sabha and legislative council**
- The Constitution (**108th Amendment**) Bill, 2008, was introduced in Parliament.
- The last attempt was made in **2010** when the WBR Bill was **passed in the RS but the LS never voted on it**.



The demand for reservation for women in legislative bodies:

- It is seen as **a logical extension of the 72nd and** 73rd constitutional amendments (1992,1993), which reserved one-third of all seats and chairperson posts for women in rural and urban local governments.
- However, there has **never been a political consensus** on the issue.

Women in Parliament: India and the rest of the world:

- Just **14%** of 17th LS MPs are women (**78** in total). Women make up roughly **11%** of the RS.
- While the number has **increased significantly since the 1st LS** (5%), it is still far lower than in many countries.
- According to PRS data, **Rwanda (61%), South Africa (43%), and even Bangladesh (21%)** are ahead of India.
- According to the Inter-Parliamentary Union's latest report, India ranks **144 out of 193 countries** in the representation of women in Parliament.

Need for greater representation for women in legislative bodies:

Proponents	Opponents
• **Affirmative action** → reservation in panchayats → empowerment of women • **Gender-sensitive laws increased responsiveness** • **Decriminalise politics** - fewer criminal charges • Political participation is a **human right** regardless of its instrumental value	• **Perpetuate unequal status** of women → would not be perceived to be competing on merit. • **Diverts attention from the larger electoral reform** such as the criminalization of politics, inner party democracy, etc. • **Restricts choice of voters to women candidates.** • Rotation of reserved constituencies may **reduce the incentive for an MP to work.**

Conclusion:

Until consensus is reached on the Women's Reservation Bill alternate methods such as reservation in political parties, and increasing women voters' turnout, must be undertaken.

Insta Links:

Way forward for Women in the Indian political system

Mains Links:

Q. "The reservation of seats for women in the institution of local self-government has had a limited impact on the patriarchal character of the Indian political process". Comment. (UPSC 2019)

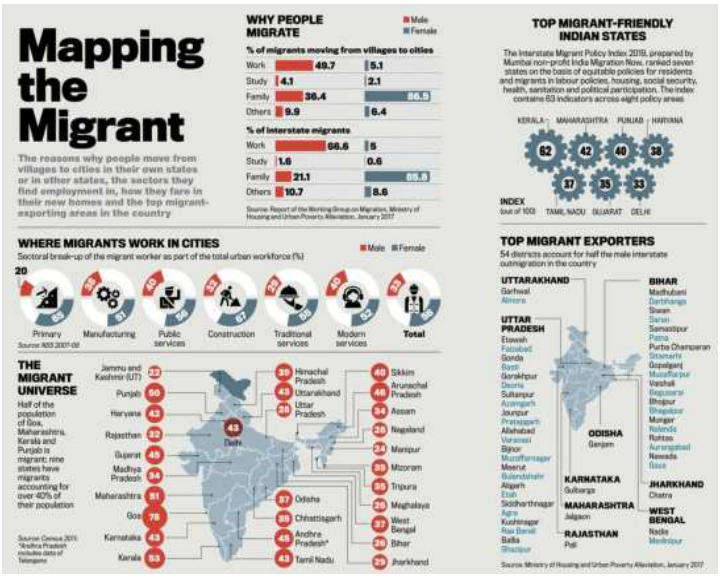
WHY MIGRANT WORKERS' ISSUES RECUR?

Context:

Rumours of migrant workers being assaulted in Tamil Nadu have triggered concern among manufacturers in the state.

Background:

Article 19(1)(e) of the Constitution, guarantees all Indian citizens the right to reside and settle in any part of the territory of India, subject to reasonable restrictions in the interest of the general public or protection of any scheduled tribe.



Issues related to migrant workers in India:

- Lack of social security and health benefits
- Lack of portability of state-provided benefits
- Lack of access to affordable housing
- **Lack of data** makes it difficult to track labourers during times of crisis
- **Inadequate coordination** among states on a formal exchange of information
- **The nativist agenda** of political parties in the states. For example, many state governments have reserved a certain percentage of employment for locals.

What is the legal framework for migrant welfare?

- **The Inter-State Migrant Workmen Act, 1979** mandates that the establishments which 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 as well as host states.**
  - **However, this Act has not been fully implemented in practice.**
- This Act has been subsumed into the four labour codes **notified by the Centre:**

- **The Code on Wages, 2019;**
- **The Industrial Relations Code, 2020;**
- **The Code on Social Security, 2020; and**
- **The Occupational Safety, Health, and Working Conditions Code, 2020.**
- **These have not been implemented yet.**

Way ahead:

- To put the four labour codes into effect as soon as possible, the central and state governments must **collaborate**.
- The welfare measures for the community should include -
  - **The supply of pulses and edible oil at concessional rates under the PDS,**
  - **Supplementing what is being given under the 'One Nation One Ration Card' scheme.**
- **An exclusive wing** can be formed to address the issues and problems migrants face.
- **Instituting a fresh and comprehensive stud**y of migrant workers and helping in their integration with the local community.

Best practices adopted by some Indian states:

- **Odisha and Andhra Pradesh** (AP) signed an MoU to track labourers migrating from Odisha to work in brick kilns in the-united AP.
- **Kerala** has set up facilitation centres (maintain data) for migrant workers whom the state refers to as "**guest workers**".
- **Jharkhand** has started the Safe and Responsible Migration Initiative (SRMI) in 2021 to generate data and then map the labourers who move out to several states for work.
- The first **Jharkhand Migrant Survey** (JMS) was recently conducted across 24 districts of the state.

Conclusion:

- There is a thin line separating **nativism and chauvinism,** which can be breached at any time.
- Thus, only registering workers in a database will not help unless worker rights are ensured and violations of rights are strictly dealt with.

Insta Links:
Lessons from COVID: Jharkhand's 1st survey of migrants

Effect of policies and politics

SRI LANKA'S RECOVERY | THE SIGNIFICANCE OF INDIA'S SUPPORT

Context:

Sri Lankan President announced that the country had cleared the last hurdles to be approved for a $2.9 billion bailout from the IMF.

Background:

The country has been reeling from the **covid crisis, economic mismanagement** by the Rajapakse regime, **mounting debts** → soaring inflation → GDP/ Exports collapse → Currency collapse.

What the IMF bailout would mean for Sri Lanka?

- Brings a lot of **creditworthiness** to the entire system and **confidence**.
- A lot of other agencies like the **World Bank, AIIB, and ADB**, have lined up funds to come in.
- Debt becomes more sustainable → access to the capital market → stabilizing the economy.

How India supported its neighbour?

- Contrary to **China**, India's support has come unconditionally, and more promptly.
- India's support to Sri Lanka (worth a combined $4 bn) includes -
  - Shipments of grain, fuel, essentials, medicines
  - Credit lines
  - Debt repayment relief
  - Support at the IMF to work on the bailout package
  - Support at the G20 and BIMSTEC

How did Sri Lanka respond to India's support?

- "India had really come to our rescue, **India had provided us with a lifeline** which allowed us to stay afloat during a very difficult time," Minister of Foreign Affairs of Sri Lanka.
- In a speech on Women's Day, Sri Lankan President **thanked 3 women** - Nirmala Sitharaman,

Janet Yellen, and Kristalina Georgieva for helping Sri Lanka.

- Sri Lanka is looking for **more investments from India** in IT, pharmaceuticals, the energy sector, education, etc.

Challenges ahead:

- For India:
  - **The controversy over Adani projects in Sri Lanka (2 wind power plants in Mannar and Pooneryn areas of [northern] Sri Lanka, West Container Terminal at Colombo Port, etc).**
  - **The opposition had raised issues over the manner of choosing the company.**
- **For Sri Lanka:** How can Sri Lanka balance its ties with China and India?
  - **Sri Lanka has been a very close friend of India and doesn't want to hurt India's security concerns.**
  - **Despite all the problems China is also India's biggest [trading] partner.**
  - **Similarly, Sri Lanka also wants to work with Indians and the Chinese, and the rest.**

Conclusion:

Sri Lankan crisis and reversal is a good example for the region - it is about being more sensitive to a neighbor's needs rather than outspending rivals.

Insta Links: The many ways of helping Sri Lanka

Mains Links:

Q. In respect of India — Sri Lanka relations, discuss how domestic factors influence foreign policy. (UPSC 2013)

Indian Diaspora.

INDIAN DIASPORA: THE ROOTS OF GLOBAL SUCCESS

Context:

In times when it is difficult for an immigrant to succeed, we notice the remarkable presence of Indians in the leadership of global organizations: IBM**, Google, Microsoft, and now the World Bank.**

Area	Contribution	Examples
Technology	Played a crucial role in the development of Silicon Valley	Sundar Pichai, CEO of Google, Satya Nadella, CEO of Microsoft
Medicine	Leading medical practitioners, researchers, and academics	Dr Sanjay Gupta, CNN's Chief Medical Correspondent, Dr Siddhartha Mukherjee, Pulitzer Prize-winning author
Entrepreneurship	Founders of successful startups and businesses	Vinod Khosla, co-founder of Sun Microsystems, Shantanu Narayen, CEO of Adobe, Indra Nooyi, former CEO of PepsiCo
Arts	Achieved global recognition for their creative works	Mira Nair, film director, Ravi Shankar, musician, Padma Lakshmi, model, actress and author
Literature	Award-winning authors, poets, and academics	Salman Rushdie, Booker Prize-winning author, Jhumpa Lahiri, Pulitzer Prize-winning author, Amitav Ghosh, literary critic and novelist
Politics	Elected officials and influential policymakers	Rishi Sunak (UK Prime Minister), Kamala Harris, Vice President of the United States, Nikki Haley, former Governor of South Carolina, Ami Bera, Congressman from California

Reasons behind this:

- **Education**: Indians place a strong emphasis on education, and many Indian leaders have received top-notch education from prestigious institutions around the world
- **Diversity**: This diversity has helped Indian leaders develop a **broad perspective and a deep un-**

derstanding of global issues.

- **Work Ethic**
- **Networking**: Indians have a strong **network both within and outside the country**,
- **Multilingual**: **Many Indians are multilingual**, which has helped them communicate effectively with people from different countries and cultures.

Implications of its people having top leadership positions in global organizations for India:

- Increased Global Influence
- **Reduce asymmetric information** and thus improve global engagement with India.
- Improved Reputation
- Economic Benefits
- Access to Information
- Capacity Building
- National Pride

Insta Link: Indian Diaspora

Mains Link:

Q. Indian Diaspora has an important role to play in South East Asian countries' economies and societies. Appraise the role of the Indian Diaspora in South-East Asia in this context. **UPSC 2017**

International institutions, agencies and fora

G20 MEETING SHOWS A DEEPENING CRISIS IN MULTILATERALISM

Context:

The **G-20 Foreign Ministers' meeting** in Delhi was unable to agree to a joint communique, over differences between Russia and the West on the war in Ukraine.

Issues that needed to be addressed:

- **The war in Ukraine has** a **big impact on the world economy** but the G20 is **not the platform to address such issues.**
  - **The UNSC and UNGA resolution condemn Russia's actions against Ukraine and call for its unconditional and total withdrawal from Ukrainian territory.**
- **Upholding international law that safeguards peace and stability**, that is defending the principles enshrined in the Charter of the UN and adhering to international humanitarian law.

The principal reason for the diplomatic failure in Delhi:

- The decision by Russia to **walk away from the Bali consensus** (calling it a "thing of the past") and China's decision to support it.
- Russia also feels that the meetings are about the **economy, growth, development, and other global challenges**.

Implications:

Underlines the **deepening great power conflict** and **worsening crisis of multilateralism**.

Other agreements at the meeting:

A number of issues of interest to India and the developing world include -

- Food and energy security,
- Cooperation to counter-terrorism, climate change, global health, and disaster management.

India's twin ambitions as G20 President:

- To continue the **campaign to reform multilateralism** and
- To get the world to take **greater cognisance of the challenges** faced by the "**Global South**."

Way ahead for India as G20 President:

- It is clear that **India cannot rely on the language of the Bali Summit.**
- There is a need to **craft fresh language on Ukraine** - an innovative formula that considers Russian concerns as well as the western desire to condemn Russia's conduct.
- **India can leverage Quadrilateral Security Dialogue** (Quad), whose foreign ministers are about to meet after the G20 foreign ministers' meeting.

Conclusion:

As host, **India is in the 'hot seat'** balancing the G7 camp on one side and the Russia-China combine on the other, to ensure that a middle path is found.

Insta Links:

A new global vision for G20

Mains Links:

Q. "The long-sustained image of India as a leader of the oppressed and marginalised nations has disappeared on account of its newfound role in the emerging global order.' Elaborate (UPSC 2019)

GS3

Indian Economy

THE IDEAL TRACK TO RUN INDIA'S LOGISTICS SYSTEM

Context:

The Union Budget 2023 has doubled the **PM Gati Shakti National Master Plan** to States to ₹10,000 crores, and has announced an outlay of **₹2.4 lakh** crore for the **Indian Railways**.

Why is the increased adoption of the railways crucial?

- **The Railways** → pan-India network → **offers an efficient and economic mode of logistics movement** → enabling a **coordinated and integrated** logistics system.
- **To improve India's logistics competitiveness.**
  - **In 2020-21, coal constituted 44% of the total freight movement of 1.2 billion tonnes, followed by iron ore (13%), cement, food grains, fertilisers, etc.**
  - **Transportation of non-bulk commodities accounts for a very small share of the rail freight movement.**

Challenges faced by Indian railways:

- The national transporter faces several **infrastructural, operational and connectivity challenges**, in turn leading to a **shift of freight traffic to roads** (**65%**).
- The effect is an increased burden on roads, congestion, pollution, and **resultant logistics cost escalations** (nearly twice the rail cost).
- An increase in containerised traffic (for non-bulk commodities) over the last decade.
- **The absence of integrated first and last-mile connectivity** by rail increases the chances of damage due to multiple handling and also increases the inventory holding cost.

Global examples:

- Globally, railway systems are **heavily investing in advanced rail infrastructure** for quick and low-cost container movement.
- **For example**, **China** uses special trains to carry containers that connect significant ports to the inland.

Role to be played by the PM Gati Shakti:

- It provides the right platform to address the infrastructural challenges that have hampered the movement of freight by rail.
- **Target** - Increasing the share of the railways in freight movement from **27% to 45%** (from **1.2 to 3.3** billion tonnes) by **2030**.

Way ahead to achieve the targets of rail freight movement:

- C**ontinuous monitoring of existing projects** (like PM Gati Shakti) along with identification of new priority areas.
- **Improve infrastructure** that is backed by adequate policy tools and also encourage private participation.
- For example, the upcoming **Dedicated Freight Corridors** and multimodal logistics parks will ease the oversaturated line capacity and improve the train timings.
- **Establishing a special entity** under the railways to handle intermodal logistics will help in addressing the **first and last-mile issues** faced by the railways.

Conclusion:

An integrated logistics infrastructure with first and last-mile connectivity is essential to make rail movement competitive with roads, and facilitate exports by rail to neighbouring countries such as Nepal and Bangladesh.

AMENDMENTS TO PMLA RULES AND ITS IMPACT

Context:

The Finance Ministry has amended the Prevention of Money Laundering Act (PMLA) and rules in line with the recommendations of the FATF - the global money laundering and terrorist financing watchdog.

Background:

- The government has been struggling to deal with the pandemic-era upsurge in advertisements soliciting **investment in virtual assets.**
- A 2021 report estimated **India with the highest number of 'crypto owners'** (10.07 crore), more than threefold than the 2nd-ranked U.S.
- ED was investigating several cases related to **cryptocurrency frauds** wherein crypto exchanges were involved in **money laundering**.

Why these amendments?

- To **incorporate more disclosures for NGOs** by reporting entities like financial institutions (FIs), banking companies, or intermediaries.
- To define **"politically exposed persons"** (PEPs).

Amendments	Significance
• **Defines PEPs:** As individuals who have been **entrusted with prominent public functions by a foreign country**, including the ▪ **Heads of State/Governments,** ▪ **Senior politicians,** ▪ **Senior government/judicial/military officers,** ▪ **Senior executives of state-owned corporations and** ▪ **Important political party officials** • The amendment is **in relation to foreign PEPs** and **not domestic ones**	• The move **brings legal uniformity and removes ambiguities** (in line with FATF norms) before India's proposed FATF assessment. • This will help India **tackle illicit financial flow**s (that fuel crime and terrorism)
• **'Beneficial Owners':** Lowered the threshold for identifying beneficial owners by reporting entities, where the client is acting on behalf of its beneficial owner. ▪ **The term 'beneficial owner' are those with the entitlement of more than 25% of shares or capital or profit of the company, which has now been reduced to 10%.**	• In line with the **Companies Act (2013) and Income-tax Act (1961).** • Bringing more **indirect participants** within the reporting net
• **NPOs**: Reporting entities are now required **to register details of the client** if it's a non-profit organization (NPO) on the **DARPAN portal** of NITI Aayog. ▪ **The definition of an NPO includes any entity or organization, constituted for religious or charitable purposes under I-T Act**	

• **Due diligence documentation requirements:** It has now been extended. ▪ **It now includes the submission of details such as names of persons holding senior management positions, names of partners, etc.**	• Until now limited to obtaining the basic KYCs of clients such as registration certificates, PAN copies, etc.
• **For Cryptocurrencies: V**irtual digital assets (VDA) trade has been brought under PMLA. ▪ **New rules mandate crypto exchanges and intermediaries dealing in virtual assets to maintain the KYCs of their clients and report suspicious transactions to financial intelligence units.**	• It will prevent the misuse of crypto, and NFTs through money laundering and other illegal activities.

Conclusion:

The decision to mandatorily bring all trade in virtual digital assets under the PMLA now lays the onus of ascertaining the place of origin of all activities in such assets upon individuals and businesses.

Insta Links:

By upholding PMLA, SC puts its stamp on Kafka's law

Mains Links:

Q. Money laundering poses a serious security threat to a country's economic sovereignty. What is its significance for India and what steps are required to be taken to control this menace? (UPSC 2013)

BREAKING BARRIERS, BUILDING INCLUSION

Context:

According to the latest **Findex Report - 2021 by the World Bank**, around **one-third of adults still lack access to formal financial services.**

About financial inclusion:

- Financial inclusion means that **individuals and businesses have access to useful and affordable financial products and services that meet their needs** – transactions, payments, savings, credit, and insurance – delivered in a responsible and sustainable way.

Importance of financial inclusion:

- Financial inclusion has been **identified as an enabler for 7 of the 17 Sustainable Development Goals.**
- The G20 committed to advancing financial inclusion worldwide and reaffirmed its commitment to **implement the G20 High-Level Principles for Digital Financial Inclusion.**
- The World Bank Group considers **financial inclusion a key enabler to reduce extreme poverty and boost shared prosperity.**
- Financial inclusion has been linked to up to **14% growth in the gross domestic product in developing economies.**

Challenges in achieving financial inclusion:

- Lack of access to basic infrastructure

- Low financial literacy
- Limited trust in formal financial institutions
- Insufficient regulatory framework
- High transaction costs
- Lack of diversity in financial services

How India's G-20 presidency helps in improving financial inclusion:

- The theme of India's G20 Presidency, "**Vasudhaiv Kutumbakam**," underlines the message of **equitable growth and a shared future for all.**
- The **G20 Global Partnership for Financial Inclusion** working group met under the grouping's **Global Partnership for Financial Inclusion (GPFI) initiative.**
- The **G20 Financial Inclusion Action Plan (FIAP)** aims to prevent future economic crises by encouraging conditions that promote its objectives of financial inclusion and stability.
- **Four major drivers have been highlighted in the new G20 FIAP** to lay the groundwork for further **progress toward financial inclusion.**
    - **the acceptance of the 2030 Agenda for sustainable development as a worldwide framework for sustainable development**
    - **rapid development and penetration of digital breakthroughs,**
    - **greater emphasis on underprivileged populations,**
    - **mainstreaming financial inclusion.**

Financial Inclusion Schemes in India

- Pradhan Mantri Jan Dhan Yojana (PMJDY)
- Atal Pension Yojana (APY)
- Pradhan Mantri Vaya Vandana Yojana (PMVVY)
- Stand Up India Scheme
- Pradhan Mantri Mudra Yojana (PMMY)
- Pradhan Mantri Suraksha Bima Yojana (PMSBY)
- Sukanya Samriddhi Yojana
- Jeevan Suraksha Bandhan Yojana
- Credit Enhancement Guarantee Scheme (CEGS) for Scheduled Castes (SCs)
- Venture Capital Fund for Scheduled Castes under the Social Sector Initiatives
- Varishtha Pension Bima Yojana (VPBY)

Insta Links: Financial Inclusion

Mains Link:

Q. Pradhan Mantri Jan Dhan Yojana (PMJDY) is necessary for bringing the unbanked to the institutional finance fold. Do you agree with this for the financial inclusion of the poor section of Indian society? Give arguments to justify your opinion. UPSC 2016

Prelims Link: UPSC 2015

Q. Pradhan Mantri Jan-Dhan Yojana' has been launched for

(a) providing housing loans to poor people at cheaper interest rates

(b) promoting women's Self-Help Groups in backward areas

(c) promoting financial inclusion in the country

(d) providing financial help to the marginalized communities

Answer: C

Health

INTEGRATED MEDICINE SYSTEM TO ALTER THE FUTURE OF DISEASE MANAGEMENT

Context:

A new study highlighted that **using yoga as an additional treatment can help patients suffering from migraine headaches and from** syncope (sudden drop in heart rate and blood pressure leading to fainting.)

- In a unique collaboration, **19 departments at AIIMS** – are **collectively working to identify areas of need where allopath** find modern medicines wanting and feel that the addition of traditional medicine **could provide relief to patients.**

In India, the traditional medicine system ("TMS") mainly comprises **Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy ("AYUSH").**

About Traditional Medicine:

According to **World Health Organization**, **'traditional medicine'** refers to the sum total of **knowledge, skills and practices** on basis of **theories, beliefs** and expe-

riences **indigenous to different cultures** used in the maintenance of health.

Benefits of Traditional Medicine System:

- **Holistic vision** towards healthcare that focuses on the prevention of diseases and promotion of health.
- **low side effects** of TMS
- Can **fill in the gaps in the allopathic medicine system**

Challenges to integration into the mainstream healthcare system

- **Unorganized:** TMS suffers from **standardization issues**.
- **Poor resources**
- **Poor acceptance**
- **Safety concerns: Dishonest/negligent** practices, **cosmeticisation** of TMS products, **adverse reactions** to TMS drugs, lack of **safety supervision systems**, **substandard courses, poorly regulated markets** etc.
- **Lack of scientific basis** and almost **no R&D in TMS**
- **Intellectual property protection**

Government Initiatives:

- Creation of **Ministry of AYUSH**
- Enactment of the **National Commission for Indian System of Medicine Act, 2020** and **National Commission for Homeopathy Act, 2020**
- Recognition of the **Institute of Teaching and Research in Ayurveda (Gujarat) as an Institute of National Importance.**
- **Developing standards in collaboration with the Bureau of Indian Standards** to augment TMS products.

Conclusion:

- Though yoga **has been practised traditionally in India for centuries**, the objective of the AIIMS initiative is to bring it under an official protocol to provide **clinical services to treat various health conditions with an integrated medical system in place.**
- The scientific findings from the AIIMS research are expected to align with the Centre's plan to roll out a "**One Nation, One Health System" policy by 2030.**

Insta Links:

Global Ayush Investment & Innovation Summit

Mains Link:

Q. How is the Government of India protecting traditional knowledge of medicine from patenting by pharmaceutical companies? (UPSC 2019)

Awareness in the fields of IT, Space

ARTIFICIAL INTELLIGENCE: COMPARING THE TYPES AND THEIR IMPACTS

Context:

AI can traditionally be divided into **Artificial General Intelligence (AGI) and Artificial Narrow Intelligence (ANI).**

AGI and ANI:

The difference lies in their scope of intelligence and their ability to generalise knowledge across different contexts.

AGI	ANI
• **Flexible and adaptable** • Designed to perform a wide variety of intellectual tasks **without human intervention** • **Unsupervised learning** means that the AI system can **learn from data** without being explicitly programmed to do so • **Lack of control** continues to learn and make decisions (**based on incomplete or uncertain information**) that even its creators cannot possibly predict. • In the realm of **theoretical** research and development.	• Designed to perform a single or a narrow set of related tasks. • Not necessarily capable of reasoning or learning in the way that humans do. • Typically trained using **machine learning algorithms** such as supervised learning, unsupervised learning, or reinforcement learning. • Widespread use in a variety of industries and applications • For example, **ChatGPT - is** a chatbot which allows users to engage in a conversation about a variety of topics.

Advantages of AI:

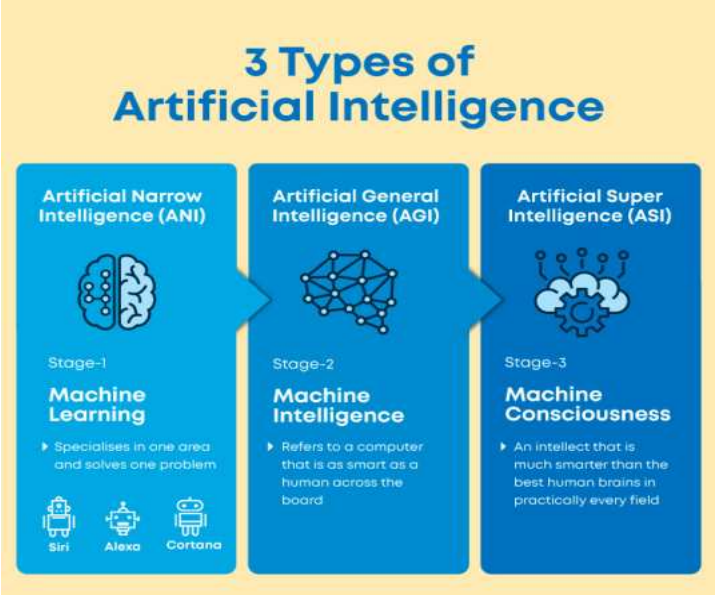
- Disruptive technology **creates new jobs and skill sets** by creating demand for expertise in machine learning, data science and natural language processing.
- It will transform industries by **creating new opportunities for growth and innovation.**
- **In industries like healthcare**, AI can optimise transportation networks, develop new materials, and even simplify manufacturing processes.

Threats:

ChatGPT/similar solutions **are proficient at automating routine and repetitive tasks** (data entry, customer service) which could perhaps **replace low-skill level workers**.

Conclusion:

The impact of AI on jobs and industries is likely to be **uneven**. Hence, **significant investment in education and training programs** and proactive policies is the need of the hour.



The science behind AI: Neural Network

A neural network is a **computer system designed to learn and recognize patterns**, like a simplified version of the human brain. It consists of layers of interconnected nodes or "**neurons**," each of which performs a simple computation.

Neural networks have become increasingly popular in recent years due to their **ability to learn complex patterns and make accurate predictions**. They have been used in a variety of applications, including self-driving cars, speech recognition, and medical diagnosis.

Insta Links:

What are hallucinating chatbots?

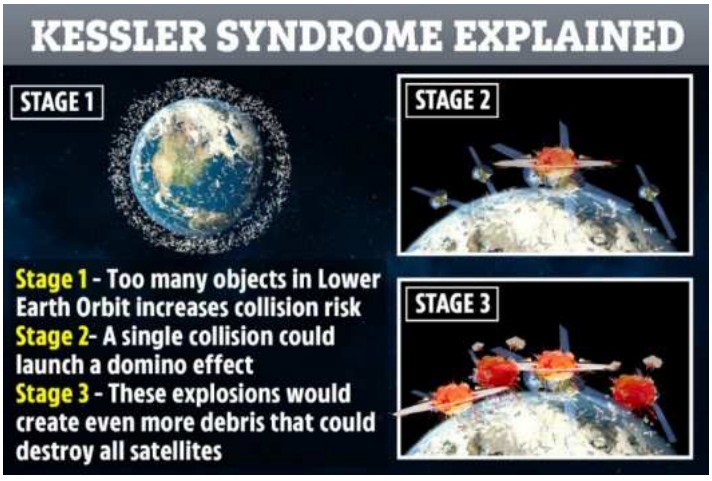
CALL FOR A LEGALLY-BINDING TREATY TO PROTECT EARTH'S ORBIT

Context:

Scientists have called for a legally binding treaty to ensure **Earth's orbit is not irreparably harmed by the future expansion of the global space industry.**

About Space debris:

- Space debris includes **non-functional spacecraft, abandoned launch vehicle stages, mission-related debris, and fragmentation debris.**
- Space debris can also be **generated when two satellites collide**, releasing thousands of new pieces.
- **Anti-satellite tests also result in debris.** In 2019, India tested an anti-satellite missile targeting a satellite in Low Earth Orbit (LEO).
- Space debris could **trigger a chain reaction, where too many objects collide with each other and create new space junk in the process** (known as Kessler Syndrome)
- Space debris encompasses **both natural (meteoroid) and artificial (man-made) particles.**



Present scenario to protect Earth's orbit:

- **Companies are not incentivized to clean up orbits or to include de-orbiting functions in satellites**.
- De-orbiting means **bringing dead satellites back to Earth**.

- There is **no international treaty that seeks to minimize orbital debris**. But the **United Nations Committee on the Peaceful Uses of Outer Space has laid out guidelines to mitigate space debris.**
- Operators are expected to **clear the orbit within 25 years after the satellite's mission ends.** Still, most **states have neglected to implement the necessary local space regulations, according to the letter.**

Way forward:

- Any agreement should include measures to **implement producer and user responsibility for satellites and debri**s, from the time they launch onward.
- Minimizing the pollution of the lower Earth **orbit will allow continued space exploration, satellite continuity, and the growth of life-changing space technology**.

Related News:

ISRO brings down decommissioned weather satellite

Context: For the first time the **Indian Space Research Organisation** brought down a satellite in a **controlled manner after its end of life.**

- The weather satellite **Megha Tropiques-1,** which was developed as a **joint mission by Indian and French space agencies**, entered the atmosphere after the final two maneuvers and burnt up over the Pacific Ocean.

How was the satellite brought down?

- The Megha Tropiques satellite was launched **aboard a PSLV by the space agency in 2011.**
- Although the **planned mission life of the satellite was only three years, it continued providing data on the water cycle and energy exchanges i**n the tropics for nearly a decade.
- As some fuel was left – **it was maneuvered and brought back to earth.**

Usually, satellites are **left in their orbit and because of the gravitational pull of the earth, they come down to the atmosphere over years and years**. When the satellites re-enter the atmosphere, the **friction causes them to heat up to extremely high temperatures of thousands of degrees Celsius.** Without a heat shield, 99% of a satellite gets burnt up whether in a controlled re-entry or an uncontrolled one.

Initiatives taken by ISRO for space debris mitigation

- **Project NETRA** – to provide **information on the status of debris**.
- **ISRO System for Safe and Sustainable Space Operations Management (IS4OM**) for tracking and monitoring space objects.

Insta Links: Space Debris

Mains Link:

Q. What is India's plan to have its own space station and how will it benefit our space program? UPSC 2019

Prelims Link: UPSC 2022

Q. Which one of the following statements best reflects the idea behind the "Fractional Orbital Bombardment System" often talked about in media?
(a) A hypersonic missile is launched into space to counter the asteroid approaching the Earth and explode it in space.
(b) A spacecraft lands on another planet, after making several orbital motions.
(c) A missile is put into a stable orbit around the Earth and deorbits over a target on the Earth.
(d) A spacecraft moves along a comet at the same speed and places a probe on its surface.

Answer (c)

Bio-technology

GENE-EDITING IN EMBRYOS

Context:

A new study published in the **journal Nature Communications** has warned of the potential consequences of **gene editing technology**, which is still not fully understood.

Key findings:

- **Using Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)** to delete harmful disease-causing mutations could create more problems
  - **CRISPR could lead to extensive gene copying from one parent to another, potentially increasing the risk of diseases**

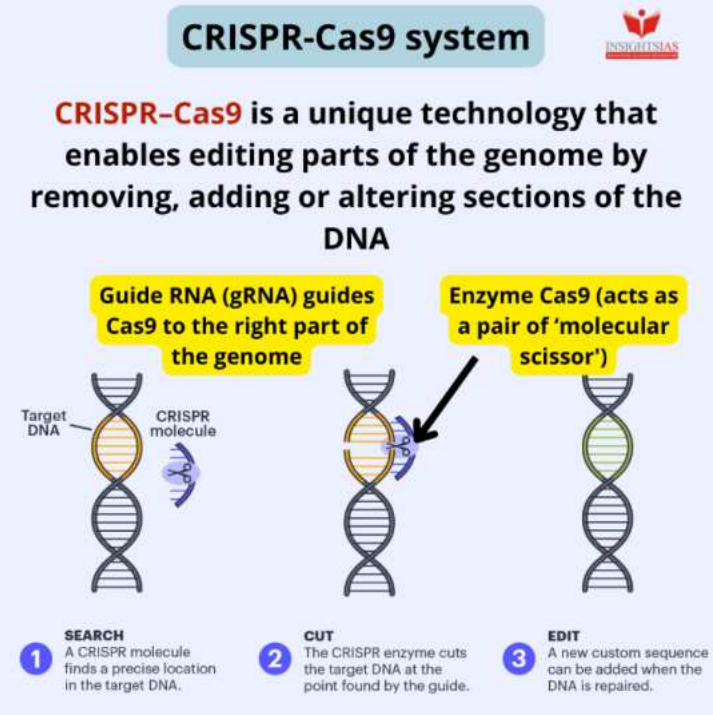
- The extent of the **DNA damage induced by CRISPR** and how cells respond to it is still not fully known
- The technology used to **test gene-edited embryos** could reduce the accuracy of genetic testing, leading to the misdiagnosis of embryos.
- The researchers concluded that **such limitations must be addressed** before gene editing technology can be used.

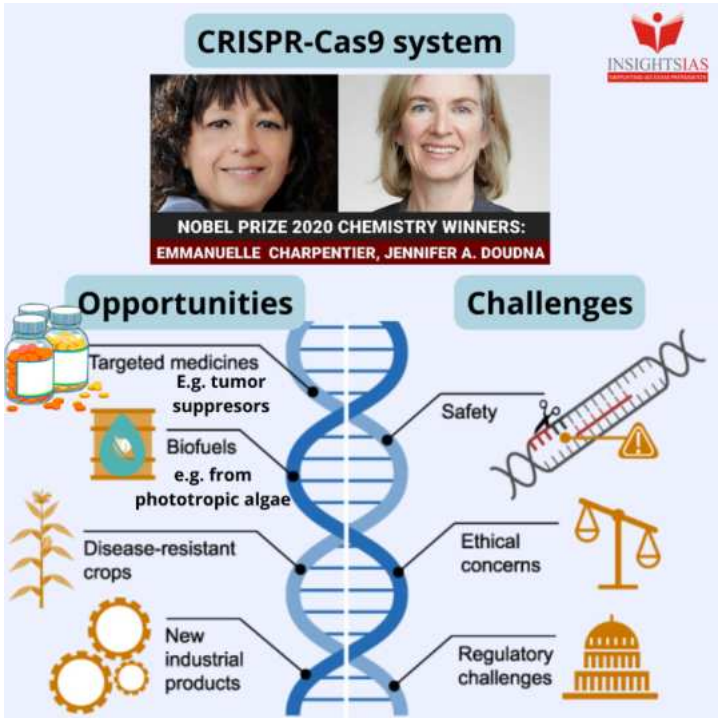
Previously, a **Chinese scientist** who announced the birth of **gene-edited twins in 2018**, had used CRISPR to make the embryos resistant to the human immunodeficiency virus (HIV).

About Gene-editing:

Genome editing (also called gene editing) is a group of technologies that allow genetic material to be added, removed, or altered at particular locations in the genome.

- **Three technology mostly used for gene-editing are** CRISPR-associated protein 9 (Cas9), transcription activator-like effector nucleases (TALENs), and zinc-finger nucleases (ZFNs).





Insta Links: 10 years of CRISPR Gene editing

Mains Links:

Q. Discuss the CRISPR gene-editing technology and the concerns raised by it. (250 words)

Prelims Links

Q. What is the Cas9 protein that is often mentioned in news? (UPSC 2019)

(a) A molecular scissors used in targeted gene editing

(b) A biosensor used in the accurate detection of pathogens in patients

(c) A gene that makes plants pest-resistant

(d) A herbicidal substance synthesized in genetically modified crops

Answer: A

Q. Consider the following pairs: (UPSC 2018)

Terms sometimes seen in news		*Context/Topic*
1. Belle II experiment	—	Artificial Intelligence
2. Blockchain technology	—	Digital/Cryptocurrency
3. CRISPR – Cas9	—	Particle Physics

Which of the pairs given above is/are correctly matched?

(a) 1 and 3 only

(b) 2 only

(c) 2 and 3 only

(d) 1, 2 and 3

Solution: B

Environmental Conservation

UNUSED FUNDS, UNSUITABLE LAND: THE STORY OF CAMPA

Context:

Compensatory afforestation forms a significant component of various reforestation programmes being implemented in India.

Background:

- India has promised to **increase its forest and tree** cover to absorb an additional 2.5 - 3 billion tonnes of CO2 equivalent by 2030.
- However, **the forestry target is difficult to achieve** due to the need for rapid industrial, infrastructure development, and urbanisation.
- In the last 10 years, **more than 1,611 square km** of forest land has been cleared.
- The government data shows that **total forest cover had increased by 1,540 square km** in the two years between 2019 and 2021.

Programmes with compensatory afforestation component:

- Green India Mission,
- **National afforestation programme**
- Tree plantation exercises along the highways and railways
- National rural employment guarantee scheme (MGNREGS)
- Namami Gange, etc

What is Compensatory Afforestation?

- **The programme** ensures that forest lands getting 'diverted' for non-forest purposes is **mandatorily accompanied by afforestation** on an equal area of land.
- It was made a legal requirement through the **Compensatory Afforestation Fund (CAF) Act 2016.**
- Though the law came in 2016, the concept has existed since the 1980s, as an offshoot of the Forest Conservation Act 1980.

Salient provisions of the CAF Act 2016:

- Newer parcels of land are earmarked for development as forests.
- Project developers (public/private) are **required to fund the entire afforestation activity** on these new lands.
- Project developers are asked to pay for the Net Present Value (NPV) **of the forests** being cleared, as the new lands cannot be compared with the fully grown forests getting diverted.
- Recent valuations say that NPV stands **between Rs 9.5 lakh and Rs 16 lakh per hectare**, depending on the quality of forests getting diverted.
- All this money is meant for **increasing/improving the quality of forest cover** in the country.

How money is disbursed for compensatory afforestation?

- The money is parked in **special funds** created for this purpose at the Central and state levels.
- The money is **first deposited in the Central fund**, from where it gets disbursed to states where the projects are located.
- State governments prepare **an annual plan of operations** → approved by the Compensatory Afforestation Management and Planning Authority (CAMPA) at the Central level → the state government transfers funds to the state forest departments → carry out the work.
- The Central fund **can keep up to 10% of the total money** for administrative expenses.

Issues faced by the compensatory afforestation:

- **Legitimised clearing of forests** and see it as an example of **'**greenwashing**'**.

- Money collected before 2016 had **remained largely unutilised. For example,** much of the Rs 55,000 crore in the state funds remains locked.
- Allegations of **misutilisation** or diversion of these funds.
- **Lack of availability of suitable land/**unavailability of land in a **contiguous stretch** remains the biggest problem.
- Land made available for afforestation cannot be used for any other purpose and is **unsuitable for growing plantations.**
- Often the plantations are **monocultures**, which is against the core concept of biodiversity.
- **Biotic pressures** - plantations face nearby human habitations and cattle.

Conclusion:

As the clearing of forests cannot be entirely eliminated, compensatory afforestation is a good mechanism to make up for these losses to some extent. However, the above issues need to be addressed.

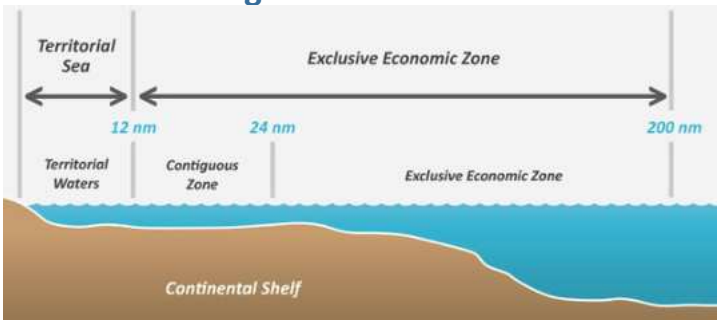
Insta Links: CAMPA Funds

WHAT IS THE UN HIGH SEAS TREATY AND WHY IS IT NEEDED?

Context:

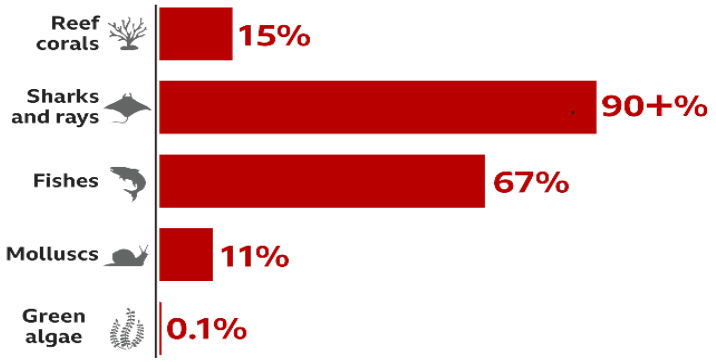
After more than a decade of negotiations, the UN members have agreed (in New York, US) on the first-ever treaty - **the UN High Seas Treaty, to protect the world's oceans outside national boundaries**.

What are the high seas?



- **2/3rd of the world's oceans** are currently considered international waters/high seas.
- But until now **only about 1%** of these waters have been protected.
- According to **the IUCN**,
  - **Nearly 10% of marine species on the high seas were found to be at risk of extinction mainly due to overfishing and pollution.**
  - **41% of the threatened species are also affected by climate change (more CO2 absorption, more acidic, increased marine heat waves), and deep-sea mining.**
- For example, **Dugongs** used to be common marine animals but now less than 1000 remain in the wild.
- Therefore, the issue of climate change in the sea involves implementing other global agreements such as the Paris Agreement.

Global species assessed for extinction threat



*Assessed species include lobsters, freshwater crabs, freshwater crayfishes and freshwater shrimps

Source: IUCN Red List

BBC

What is in the High Seas Treaty?

- It places **30%** of the world's international waters into **protected areas (MPAs) by 2030**, and puts more money into marine conservation and new rules for mining at sea.
- It also provides for -
  - **Arrangements for sharing marine genetic resources**
  - **Requirements for environmental assessments for deep sea activities like mining.**
- Richer nations have pledged money for the delivery of the treaty. **For example**, the EU announced nearly 820m euros (£722.3m).
- The treaty can have **benefits for society (pharmaceuticals and food)** and will help **reverse biodiversity losses and ensure sustainable development**.

Concerns:

- There were debates, particularly around **what a marine protected area is** - sustainable use/fully protected from fishing, shipping, and exploration activities like deep-sea mining.
- **The limited funding options included** in the text of the treaty.
- **If the MPAs are not properly connected**, it might not have the desired impact as many species are migratory.

Way ahead:

The treaty must be formally adopted and will enter "into force" once enough countries (~ 40) have signed and legally passed it in their own countries.

Insta Links:

How to save our high seas from overfishing, and pollution?

Prelims Links: UPSC 2014

Q. Consider the following international agreements:

1. The International Treaty on Plant Genetic Resources for Food and Agriculture
2. The United Nations Convention to Combat Desertification
3. The world Heritage Convention

Which of the above has/have a bearing on biodiversity?

1. 1 and 2 only
2. 3 only
3. 1 and 3 only
4. 1, 2 and 3

Ans: 4

HOW TO BECOME A GREEN HYDROGEN SUPERPOWER?

Context:

The 2023 Union Budget has allocated ₹19,700 crore for the **National Green Hydrogen Mission.** This could help India establish itself as a green H2 superpower.

Importance of Green H2 for India:

- India has committed to **50% electricity capacity from non-fossil sources by 2030**.
- **An energy transition in the industry** (most GHG emissions come from steel, cement, fertilizers, and petrochemicals) is needed at the same time.
- Green H2 can serve as an **energy source** (heavy industry, mobility, and power storage) and an **energy carrier** (as green ammonia/blended with natural gas).
    - **It holds the promise of fuelling industrial growth while simultaneously reducing industrial emissions.**
- With abundant sunshine and wind energy resources, **India is geographically blessed** to become one of the lowest-cost producers of green H2.

Priorities to convert the vision into reality: Government and industry must act in sync for -

- **Becoming a big player domestically** - a necessity to be a major player in the international market.
    - **The mission introduces a Strategic Interventions for Green Hydrogen Transition (SIGHT) fund (₹13,000 crores) to support heavy industries to increase demand, offering economies of scale, etc.**
    - **Blending mandates for refineries can be another demand trigger.**
- As the second-largest steel producer in the world, **India can aspire to become the largest**

green steel producer.

- **Costs of green steel, made from green H2, could be reduced with economies of scale.**

- India can be **an attractive destination for domestic and foreign investment**.
- **Becoming more competitive** (with targeted public funding) in manufacturing the most critical and high-value components of **electrolysers** in India.
  - **The SIGHT fund offers ₹4,500 crores to support electrolyser manufacturing under the performance-linked incentive scheme.**
- **Establishing bilateral partnerships to develop resilient supply chains**.
  - **Indian companies should consider joint projects in countries with good renewable energy resources and cheap finance to become export competitive.**
- India must coordinate with major economies **to develop rules** for a global green H2 economy.
  - **India's G20 presidency is an opportunity to craft rules, addressing operational threats, industrial competitiveness, and strategic threats.**
- India should **promote a global network** of green hydrogen via which companies could collaborate.

Conclusion:

Green hydrogen will be a critical industrial fuel of the 21st century. India is well-positioned to show leadership, which is in India's and the planet's collective interest.

Insta Links: India's green hydrogen challenge

Mains Links:

Q. What are the key features of the National Clean Air Programme (NCAP) initiated by the Government of India? (UPSC 2020)

Prelims Links: (UPSC 2016)

Q. Which of the following best describes/ describes the aim of the 'Green India Mission' of the Government of India?

1. Incorporating environmental benefits and costs into the Union and State Budgets thereby implementing the `green accounting'
2. Launching the second green revolution to enhance agricultural output so as to ensure food security to one and all in the future
3. Restoring and enhancing forest cover and responding to climate change by a combination of adaptation and mitigation measures

Select the correct answer using the code given below.

1. 1 only
2. 2 and 3 only
3. 3 only
4. 1, 2 and 3

Ans: 3

CAN THE CHEETAHS HELP INDIA'S GRASSLANDS?

Context:

Since September 2022, India has translocated eight African cheetahs from **Namibia** and 12 from **South Africa.**

Background:

- This is part of **a long-term conservation plan to re-introduce** the wild cat into the country after it became extinct in the **1950s**, primarily due to hunting.
- The aim is to build a **self-sustaining population**, centred at MP's Kuno National Park, which will also contribute to the global survival of the cheetah as a species.

What are Grasslands?

Grasslands (e.g. prairies or savannas) are biomes characterized by vast expanses of grasses and a few scattered trees. They are found in regions where there is not enough rain to support forests but where there is enough rainfall to prevent the land from becoming a desert.

- Grasslands are typically located in the **interior regions of continents**, away from the moderating influence of oceans.

- Approximately **24 per cent** of total vegetation cover is grassland in India.

Can the cheetahs help India's grasslands?

Yes	No

• Cheetahs have been found in woodlands, **but they largely prefer running.**
• They do indicate the **overall wellness of -**
  • open areas, meadows, and grasslands and the
  • ungulate populations (deer and chinkara)/cheetahs' usual prey
• So, the health of the cheetah population does count as a **surrogate marker of the health of the grasslands.**
• **The success story (The Project Tiger 1973)** - India now has 53 tiger reserves making up **2.3%** of the country's geographical area.
	• Cheetahs may not help in restoring grasslands until India addresses other issues.
	• For example,
	  • The Wasteland Atlas of India still categorises large stretches of open natural ecosystems as wasteland.
	  • Renewable energy projects are granted large tracts of open natural ecosystems, to establish solar panels.
	  • The level of human presence is high in these grasslands

Conclusion:

African cheetah is a species which has never been to India. Yet, its very introduction will enable India 'if not wholly but in some measure' revive its magnificent grasslands.

Insta Links: **Cheetah project to bring in 12 big cats from South Africa**

Disaster and disaster management.

TOURISM IN THE HIMALAYAS IS NOT UNIFORM

Context:

Over the last year, the Union government has laid emphasis on **promoting sustainable** tourism **in the Himalayan region.**

Background:

- The Indian Himalayan region, with its rich biodiversity, **offers conditions suitable for several activities** (recreation/adventure/religious pilgrimages) and **attracts a large number of visitors** from all over the world.
- As tourism is an important **source of income and livelihood** for people living in this region, it must be ensured that these activities take place in a **sustainable manner.**

Recent efforts:

- National Strategy for Sustainable Tourism and Responsible Traveller Campaign**:** Launched in 2022 by the Union Ministry of Tourism, it focuses on
  - **Promotion of environmental, economic and socio-cultural sustainability;**

- **Protection of biodiversity;**
- **Capacity-building and governance;**
- **Greater investment in green infrastructure with more efficient transport facilities reduced air pollution, and conservation of heritage sites and open spaces.**

- Swadesh Darshan 2.0: It is a centrally sponsored scheme for the development of **theme-based tourist circuits in the country**, including a vision to set up sustainable and responsible tourism in the Himalayan region.

Some challenges need greater focus:

- **Mass tourism:** Seasons play a role as a major tourist activity is confined to just a few months in a year - during the peak summer season.
- **Greater anthropogenic pressure** on existing infrastructure and local resources during the summer months.
- **More generation of solid waste**, ambient air pollution, water pollution and deforestation.
- Shift is seen in snowfall and melting patterns due to climate change**-related impacts.**

Way ahead:

- **Reduce mass tourism and** inculcate a spirit of conservation among locals and tourists.
- Promoting ecotourism (which involves responsible travel and safeguarding of local environment and ecosystems), alternative or **green tourism**.
- **Decentralisation of tourism activities** based on the available resources in any place. Tourists would also be able to access the benefits of the largely untouched environment.
- Developing tourist systems in **north-eastern states** that have great potential for ecotourism activities.
- **Assessing the carrying capacity of municipal infrastructure** prior to development works.

Combat pollution:

- By practising **microbial bio composting**: the best way of natural disintegration and decomposition of waste under aerobic process.
- To combat air pollution, **planting locally available (**like broad-leaved banj oak), **introducing** electric vehicles**, using non-conventional energy sources** like solar, etc.
- **Pine forests**, which often witness fires, can be used to make bio-briquettes (used as a substitute for biofuel) and purify water resources.

Involve all stakeholders:

- Any sustainable approach undertaken should involve the **local communities, visitors, etc**. **Encourage skill and capacity-building programmes** to spread awareness among different stakeholders.
- Visitors should learn the **rules and good practices** to be adopted while travelling through these areas.

Insta Links: Towards sustainable growth

Mains Links:

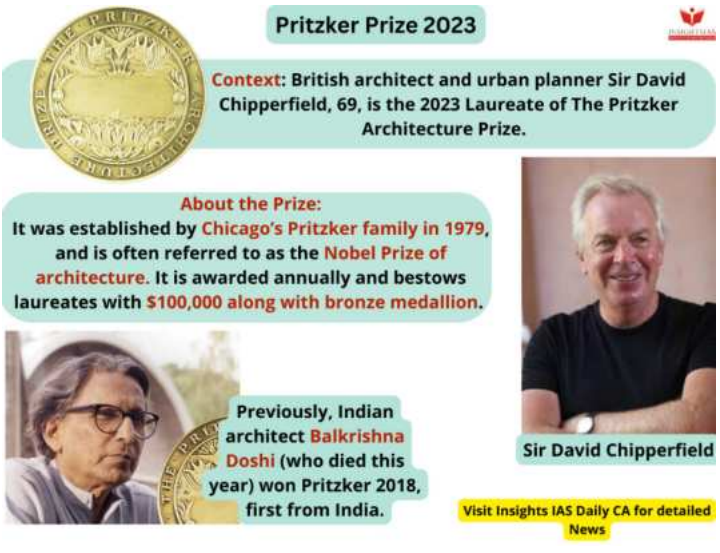
Q. Define the concept of the carrying capacity of an ecosystem as relevant to an environment. Explain how understanding this concept is vital while planning for the sustainable development of a region. (UPSC 2019).

FACTS FOR PRELIMS

GS1

Prize

PRITZKER PRIZE 2023



Festival in News

ATTUKAL PONGALA

Context:

The Attukal Pongala falls on the **ninth day of the annual ten-day festival at the Attukal Bhagavathy Temple,** Thiruvananthapuram.

- It is one of the **world's largest gatherings of women.**

About Pongala:

- Pongala is a **ten-day-long festival of Attukal Bhagavathy Temple**.
- The festival commences with the **musical rendering of the story of the Goddess** (Kannaki Charitam) during the "Kappu Kettu ceremony".
- The story invokes the presence of **Kodungallur Bhagavathy and the slaying of the Pandyan King**. This festival commemorates the **victory of Good over Evil, by the slaying of the Pandyan King.**

About Attukal Bhagavathy temple:

- Dedicated to **Goddess Bhagavathy**.
- Also known as, "**the Sabarimala of Women'',** this temple attracts the biggest set of women devotees for the annual Attukal Pongala festival.

Geography

GLACIAL RETREAT

Context:

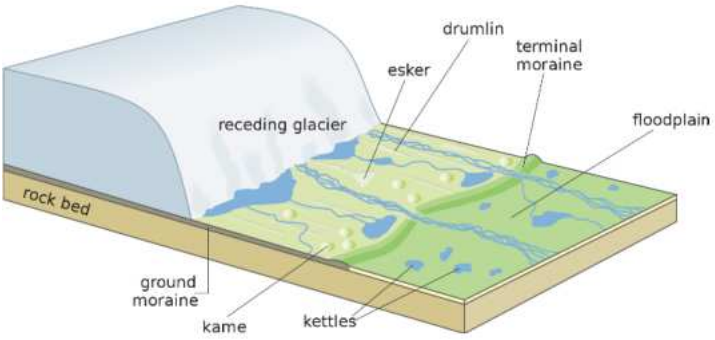
A recent study by scientists from the Wadia Institute of Himalayan Geology found that **change in debris cover** plays a critical role in the glacier surface lowering, shrinkage, retreat, and mass balance.

- The study also confirmed that the **glacier retreat rate is controlled by climate change, glacier topography, and morphology**

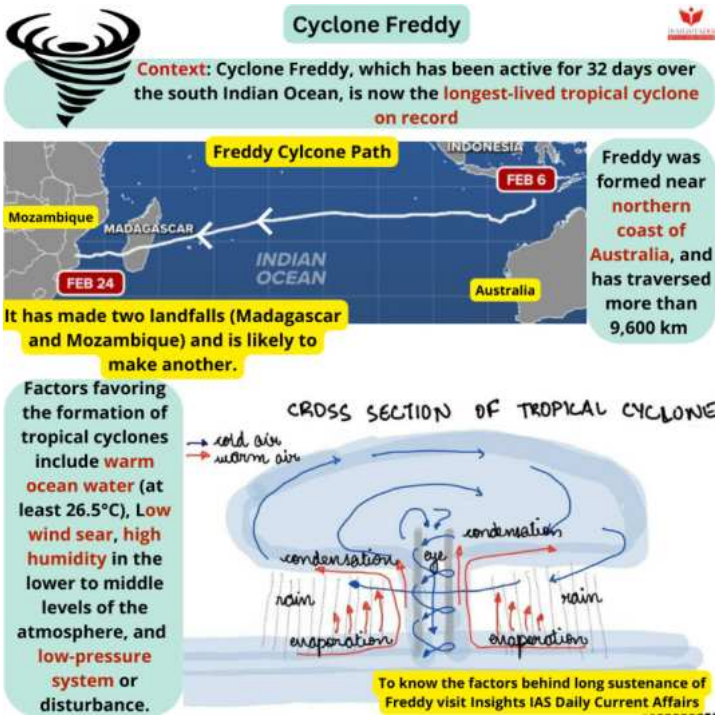
What is Glacier Retreat?

Glacial retreat is when **glacial melt occurs** faster than new seasonal snow and ice have time to accumulate.

- Out of the total water on Earth, **2.1%** is in glaciers while **97.2%** is in the oceans and inland seas.
- **91% of the Glaciers are in Antarctica** and 8% are in Greenland. They occupy about 10% of the world›s total land area.
- **Firnification**: The process of formation of Glaciers by snow compacting into glacial firn (dense, grainy ice)



FREDDY CYCLONE



Factors behind the long sustenance of Cyclone Freddy:

- **Global warming**: Absorption of human-induced greenhouse gases by the oceans, which increases their heat content, thus helping to strengthen cyclones.
- **Low horizontal wind shear favoured its rapid intensification**: Horizontal wind shear is the horizontal winds around a cyclone.
    - **When these winds have lower speeds, they help a cyclone grow in strength and when they have higher speeds, they make it dissipate.**
- **Warm sub-surface waters** helped the cyclone rapidly intensify multiple times
    - **Usually, the sub-surface water is colder and when it gets pushed towards the surface due to mixing as a result of cyclonic winds, it creates conditions that do not favour the intensification of cyclones**

Places in News

MAPPING:

A Weekly round-up of important places in the news in India & the world!

INSIGHTSIAS
SIMPLIFYING IAS EXAM PREPARATION

Places in news - India

Hasdeo Aranya (Chhattisgarh)

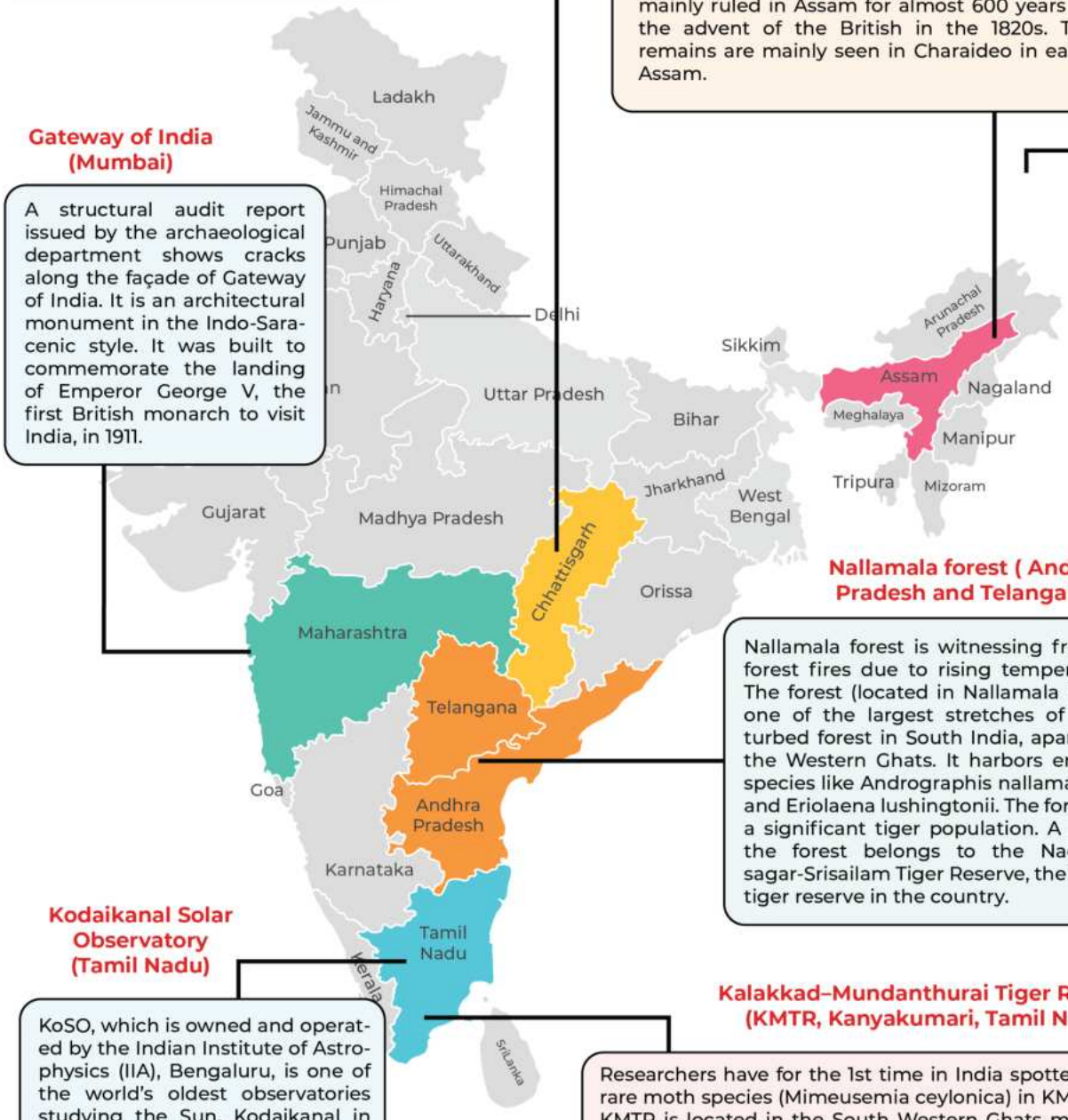
Hasdeo Aranya is a biodiversity-rich forest, which also happens to be a rich source of coal. The forest is 170,000 hectares in area and is home to a diverse ecology and Adivasi communities such as the Gonds. For months in 2022, tribals and activists protested against the operation of three coal mines in the region

Moidams (Assam)

Assam's Moidams met UNESCO technical requirements for a heritage center (yet not awarded the status). Moidams are the pyramid-like structure, mound burial tradition of the Tai Ahoms, who mainly ruled in Assam for almost 600 years until the advent of the British in the 1820s. These remains are mainly seen in Charaideo in eastern Assam.

Gateway of India (Mumbai)

A structural audit report issued by the archaeological department shows cracks along the façade of Gateway of India. It is an architectural monument in the Indo-Saracenic style. It was built to commemorate the landing of Emperor George V, the first British monarch to visit India, in 1911.



Nallamala forest (Andhra Pradesh and Telangana)

Nallamala forest is witnessing frequent forest fires due to rising temperatures. The forest (located in Nallamala Hills) is one of the largest stretches of undisturbed forest in South India, apart from the Western Ghats. It harbors endemic species like Andrographis nallamalayana and Eriolaena lushingtonii. The forest has a significant tiger population. A part of the forest belongs to the Nagarjunsagar-Srisailam Tiger Reserve, the largest tiger reserve in the country.

Kodaikanal Solar Observatory (Tamil Nadu)

KoSO, which is owned and operated by the Indian Institute of Astrophysics (IIA), Bengaluru, is one of the world's oldest observatories studying the Sun. Kodaikanal in present-day Tamil Nadu was chosen for its high altitude and dust-free environment.

Kalakkad–Mundanthurai Tiger Reserve (KMTR, Kanyakumari, Tamil Nadu)

Researchers have for the 1st time in India spotted a rare moth species (Mimeusemia ceylonica) in KMTR. KMTR is located in the South Western Ghats montane rain forests in Tirunelveli district and Kanyakumari district in the South Indian state of Tamil Nadu, is the second-largest protected area in Tamil Nadu. It is part of the Agasthyamala Biosphere Reserve. It includes three sanctuaries, viz. Kalakad, Mundanthurai, and part of Kanyakumari Sanctuary.

INSIGHTSIAS
SIMPLIFYING IAS EXAM PREPARATION

Places in news - World

Afghanistan

India will supply 20,000 metric tonnes of wheat assistance to Afghanistan in partnership with UN World Food Programme through Chabahar Port. Also, recently, the First India-Central Asia Joint Working Group (JWG) on Afghanistan was held in New Delhi and was attended by Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan. Chabahar Port is located in the Gulf of Oman in the Sistan-Baluchistan province of Iran on the Makran Coast. It is jointly developed by India, Iran, and Afghanistan.

South Korea

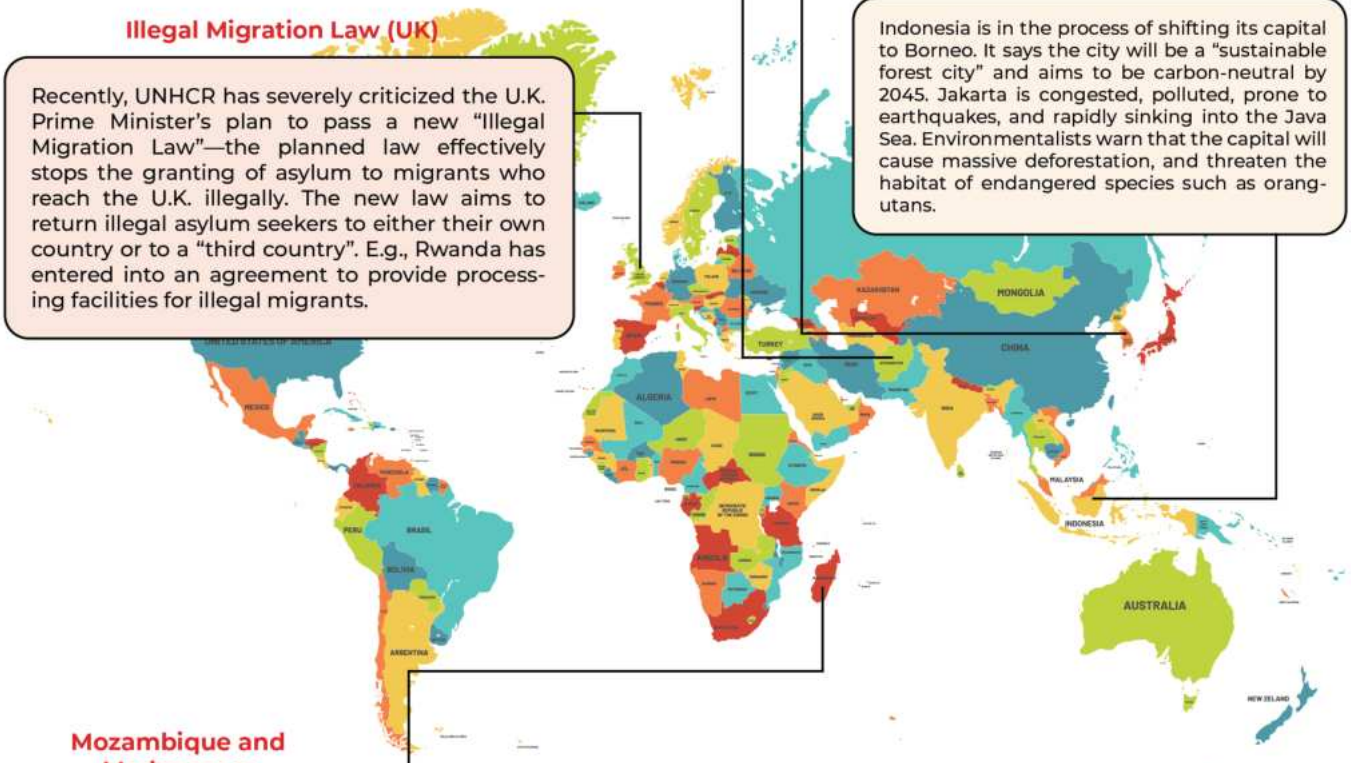
South Korea's plan for compensating victims of Japan's forced labor is drawing criticism. During Japan's colonization of Korea from 1910-1945, around 1,50,000 Koreans were forced to work in factories in Japan and thousands of Korean women were forced into sexual slavery. The issues have remained contentious between the countries.

Borneo (Indonesia's New Capital)

Indonesia is in the process of shifting its capital to Borneo. It says the city will be a "sustainable forest city" and aims to be carbon-neutral by 2045. Jakarta is congested, polluted, prone to earthquakes, and rapidly sinking into the Java Sea. Environmentalists warn that the capital will cause massive deforestation, and threaten the habitat of endangered species such as orang-utans.

Illegal Migration Law (UK)

Recently, UNHCR has severely criticized the U.K. Prime Minister's plan to pass a new "Illegal Migration Law"—the planned law effectively stops the granting of asylum to migrants who reach the U.K. illegally. The new law aims to return illegal asylum seekers to either their own country or to a "third country". E.g., Rwanda has entered into an agreement to provide process-ing facilities for illegal migrants.



Mozambique and Madagascar

Extreme climate events fuel cholera outbreaks in Mozambique, Madagascar. The two countries were affected by heavy rainfall and floods led by Tropical Storm Freddy. Mozambique is a southern African nation with a long Indian Ocean coastline. Madagas-car is an island country in the Indian Ocean, with rich biodiversity. It lies off the coast of East Africa across the Mozambique Channel. It is the world's second-largest island country, after Indonesia

Macquarie Island (Australia)

Australia has planned to give greater protec-tion to Macquarie Island (also declared a World Heritage Area). Macquarie Island is an island in the southwestern Pacific Ocean, about halfway between New Zealand and Antarctica. Several seabird species, including penguins and albatross, have been recorded on it. It is the only place on earth where rocks from the earth's mantle are actively exposed above sea level.

Society and Social Justice

WOMEN ICONS LEADING SWACHHATA' (WINS) AWARDS 2023

Context:

To highlight the impact of women in sanitation and waste management, the Union Ministry for Housing and Urban Affairs (MoHUA) announced the '**Women Icons Leading Swachhata' (WINS) Awards 2023** on the eve of International Women's Day.

Aim: It aims to **recognize celebrate and disseminate inspiring and exemplary initiatives** in urban sanitation and waste management by **women-led organizations** and individual women.

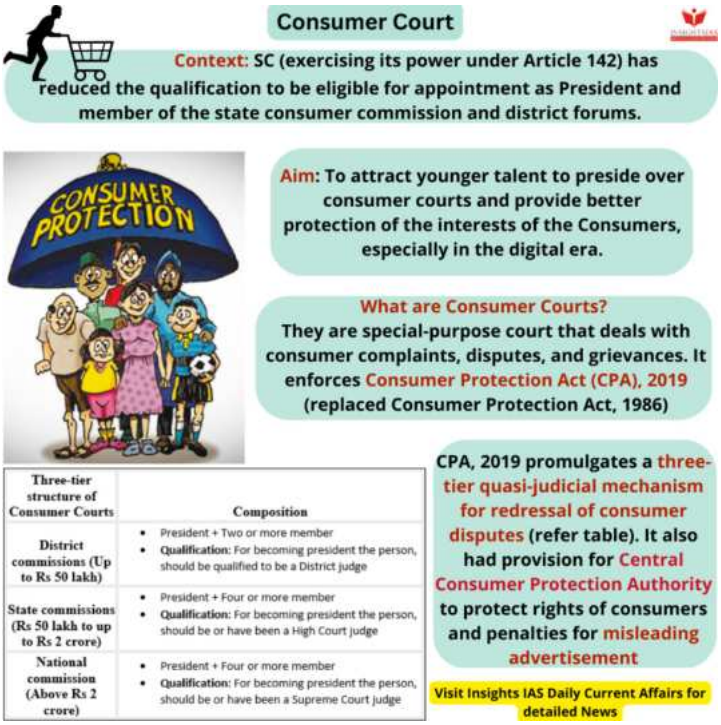
- It aims to make make a transformational shift from **'Women in Swachhata' to 'Women led Swachhata'**

Swachhatam Portal will be used for the selection of entries. In 2021, the integrated Swatchh Bharat Mission-Urban **MIS portal Swachhatam** and the state-of-art GIS platform were launched under SBM-U 2.0

GS2

Polity

SC LOWERS CRITERION FOR CONSUMER COURTS



Changes made by SC:

- Reduced mandatory professional experience for appointment (at state consumer commission and district forums):
- President (From presently 20 years to 10 years)
- Member (from presently 15 years to 10 years)
- Introduced **written exams and viva voce** to check candidates' performance.

Consumer Protection Rules, 2020 govern the **appointment of the President and members to State and District Consume**r Disputes Redressal Commissions.

About Article 142:

Article 142 of the Indian Constitution empowers the Supreme Court›s verdicts and rulings to be enforced. It stipulates that in the performance of its jurisdiction, the top court may issue any verdict or order necessary to provide "complete justice" in just about any case before it.

PMLA APPELLATE AUTHORITY

Context:

The Delhi High Court has directed the **central government** to take swift action in appointing a **chairperson and other members of the appellate authority** provided under the Prevention of Money Laundering Act (PMLA)

Change needed:

- Need for multiple benches of the PMLA appellate authority to function simultaneously to reduce the caseload
- Decisions in respect of provisional attachments had to be taken within the **prescribed time of 180 days.**

Recently, with the increase in the number of cases relating to **economic offenders taking shelter in foreign countries**, the Government has passed the **Fugitive Economic Offenders Act, 2018 (FEOA**).

- Under the act, ED is mandated to attach the properties of the fugitive economic offenders who have escaped from India warranting arrest and provide for the confiscation of their properties to the Central Government.

Prelims Links

Q. Which one of the following groups of items is included in India's foreign-exchange reserves? (UPSC 2013)

(a) Foreign-currency assets, Special Drawing Rights (SDRs) and loans from foreign countries
(b) Foreign-currency assets, gold holdings of the RBI and SDRs
(c) Foreign-currency assets, loans from the World Bank and SDRs
(d) Foreign-currency assets, gold holdings of the RBI and loans from the World Bank

Ans: B

NEW APPOINTMENTS IN THE STANDING COMMITTEE

Context:

Eight officers from the Vice President and Rajya Sabha Chairman's personal staff have been attached to **12 standing committees and eight department-related standing committees** of Parliament, with the aim of assisting the committees in their work.

Why is it being criticised?

- **The order is violative of established parliamentary procedures**: Only MPs and staff of either the Rajya Sabha or Lok Sabha secretariats can offer such roles of assistance.
    - **The personal staff of the Speaker or the Chairman are not part of parliamentary secretariats.**
- **Not all the members** were consulted about the appointments

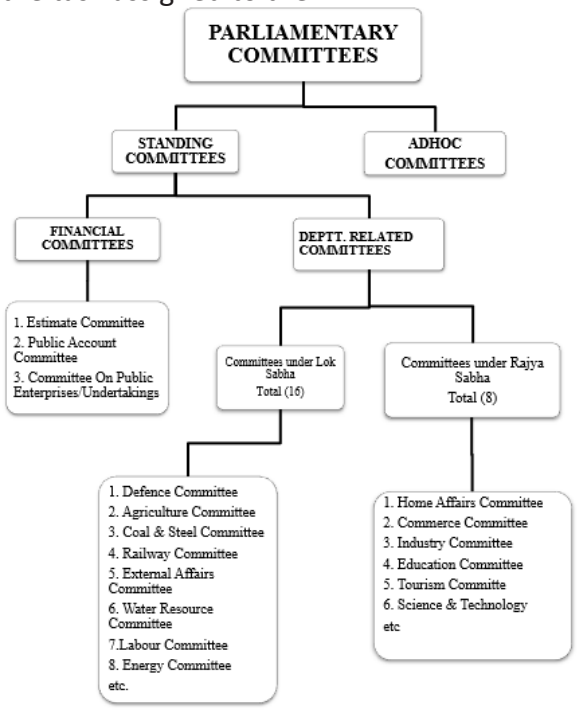
RS Chairman's defence:

- The decision was made **after multi-layered consultations** with members and Chairmen of Committees to improve productivity.
- **The appointed staff will not function as members** and the appointments were made to provide **research-oriented, knowledgeable support** to optimize output and performance.

About Parliament's Committees:

A Parliamentary Committee is a panel of MPs that are appointed or elected by the House or nominated by the Speaker/Chairman. They work under the direction of the Speaker/Chairman and present their report to them or to the House.

- They draw their authority from **Article 105 (Privileges) and Article 118** (rules to regulate the conduct of the house)
- The **Standing Committees** are permanent (constituted every year or periodically) and work on a continuous basis. While the **Ad Hoc Committees** are temporary and cease to exist on completion of the task assigned to them.



Prelims Links:

Q. With reference to the Parliament of India, which of the following Parliamentary Committees scrutinizes and reports to the House whether the powers to make regulations, rules, sub-rules, by-laws, etc., conferred by the Constitution or delegated by the Parliament are being properly exercised by the Executive within the scope of such delegation? (UPSC 2018)

(a) Committee on Government Assurances
(b) Committee on Subordinate Legislation
(c) Rules Committee
(d) Business Advisory Committee

Ans: B

Government Initiative and Policies

INTEGRATED PENSIONERS' PORTAL

Context:

Integrated Pensioners' Portal that integrate various pension-related portals like Pension Disbursing Bank portals, ANUBHAV, CPENGRAMS, CGHS into a single platform to offer ease of living for pensioners.

Benefits:

- **Will address problems faced by pensioners**, including change of bank, submission of life certificate, submission of the death certificate of pensioners, pension slip and retrieval of pension slip, income tax deduction, and pension receipt information.
- The new portal will **integrate all 18 Pension disbursing banks**
- To ensure **"Ease of Living for the elder citizens"**

Related News:

Also, a **nationwide digital life certificate** through a face authentication campaign was undertaken in **November 2022, resulting in 30 lakh pensioners** submitting their life certificates digitally.

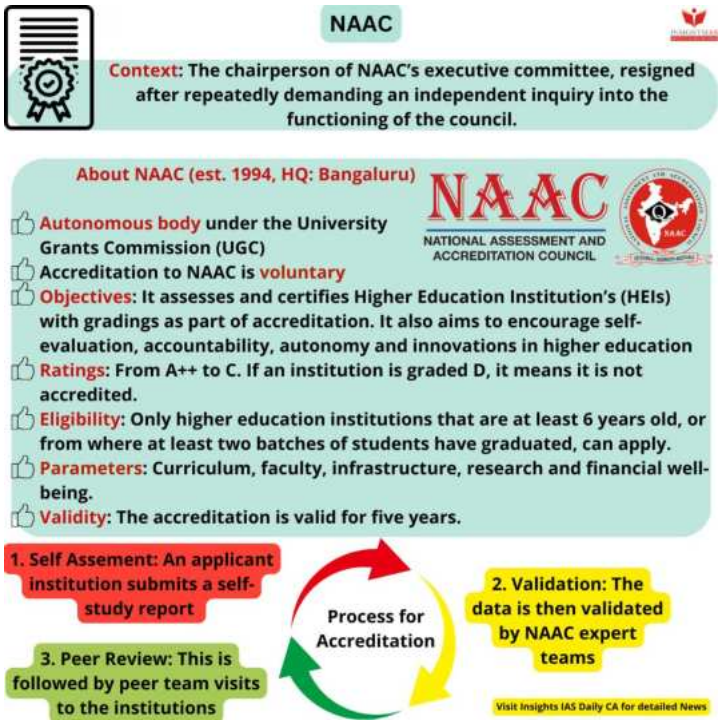
In November 2014, an **Aadhar-based scheme** for online submission of digital life certificates, **"Jeevan Pramaan"** was launched to ensure transparency and "Ease of Living" for pensioners while submitting their life certificates.

The 'Bhavishya' platform (for Pension Payment and processing) is an integrated online pension processing system that was made mandatory for all central government departments from 2017.

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL (NAAC)

Context:

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



There have been calls for the NAAC to adopt an Outcome-based approach (rather than a self-assessment input-based approach): In an outcome-based, the emphasis would be given to finding out if students are equipped with relevant skills and academic abilities.

Initiatives taken:

- **'Paramarsh' (2019; by UGC):** Best-performing institutes serve as mentors to at least five institutes aspiring to get accredited.
- **NAAC (in 2022)** also explored the possibility of issuing **Provisional Accreditation** for Colleges (PAC), under which one-year-old institutes could apply for accreditation that would be valid for **two years**.
- **Current accreditations:** Out of the **1,113 universities and 43,796** colleges in the All-India Survey on Higher Education Report 2020-21, only **418 universities and 9,062 colleges** were NAAC-accredited as on January 31, 2023 (Highest in **Maharashtra**).
- The National Education Policy (2020) has set an ambitious target of getting all higher educational institutes to obtain the highest level of accreditation over the next 15 years.

About UGC:

University Grants Commission is a **statutory body** set up by the Department of Higher Education, in accordance with the **UGC Act 1956** and is charged with the coordination, determination and maintenance of standards of higher education in India.

'SAFE HARBOR' CLAUSE IN IT LAW

Context:

The government is reconsidering a key aspect of cyberspace - **'safe harbor'**, which is the principle that allows social media platforms to avoid liability for posts made by users.

Background:

- The Union government formally outlined **the Digital India Bill, 2023** which is a broad overhaul of the decades-old IT Act, 2000.
- This Safe harbor has been reined in the **IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**.

What is a 'safe harbor'?

- Safe harbor (originally from the **US's Communications Decency Act**) - as prescribed under **Section 79 of the IT Act, 2000** - is **legal immunity** 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.
- It is a crucial tenet for **ensuring free speech on the Internet** since platforms only have to act on speech that is deemed illegal.

Then, why revisit the norm?

Intermediaries were synonymous with the safe harbor in the 2000s, but they have since **evolved into a variety of internet participants** with very varied functional needs.

The core objectives of the new Digital India Bill:

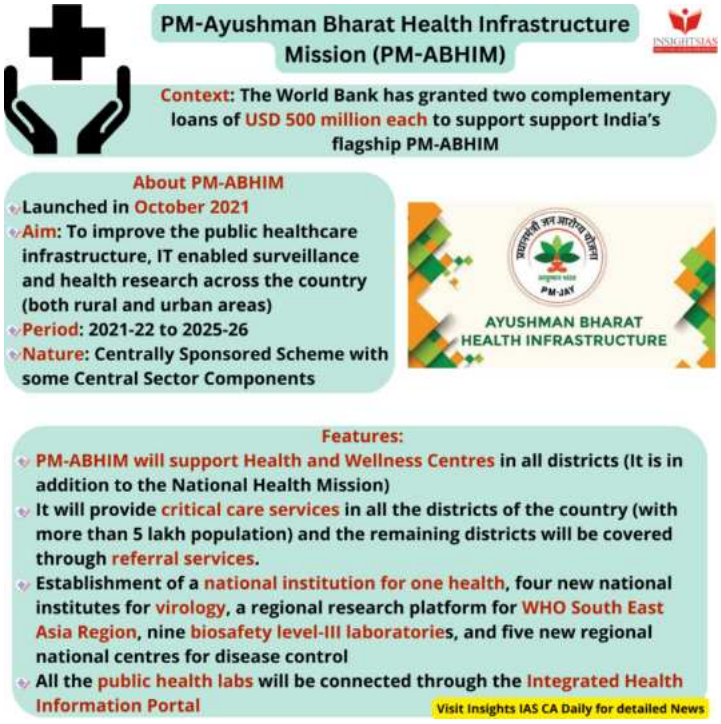
- To ensure an open and safe Internet in the coun-

try to ensure users' rights and reduce risks for them online; **accelerate the growth of technology innovation.**

- It will also **regulate a range of crimes** that the government thinks are unique to the online space.

International News and Organization

WORLD BANK COMMITS $1 BILLION TO INDIA FOR PUBLIC HEALTHCARE INFRA



Programmes being supported by World Bank are:

- **Public Health Systems for Pandemic Preparedness Program (PHSPP):** To enhance India's capacity to detect and report epidemics and pathogens, including zoonotic diseases and to build the institutional capacity of core public health institutions.
- **Enhanced Health Service Delivery Program (EHSDP):** To redesign the primary health care model, Support National Quality Assurance Standards certification and transform health sector governance and accountability

AUSTRALIA-INDIA EDUCATION QUALIFICATION RECOGNITION MECHANISM

Context:

The Australian Prime Minister, Anthony Albanese, announced an "Australia-India education qualification recognition mechanism" during a visit to India.

What does it mean?

This new mechanism means that **degrees obtained in Australia (including online degrees) will now be recognised in India**, and similarly, Indian degrees will be recognized by Australian colleges and authorities.

- **Significance**: The agreement is expected to **make it easier for Indians to go to Australia** for both education and work, and vice-versa.
- **Exceptions**: Professional registrations of engineering, medicine and law graduates will remain outside the ambit of this agreement.

Other similar agreement: India has other agreements with countries like the **US**, however, the agreement with the US does not include online courses

Other announcements:

Geelong's Deakin University will be the first overseas university to open its branch campus in India (at GIFT City, Gandhi Nagar)

'Maitri' scholarship: It will provide financial assistance to Indian students in Australia for as long **as four years**.

- The scholarships are part of the wider **Maitri (friendship) programme** that seeks to boost cultural, educational and community ties between Australia and India

Indian diaspora in Australia numbers around 8,00,000

Note: We will cover India-Australia relations in detail after the visit of the Australian PM gets over.

GS3

Economy

WORLD BANK INDEX ON THE LIFE CYCLE OF WORKING WOMEN

Context:

India scores **74.4** in the World Bank index on the life cycle of working women

- **The report measures** laws that affect women's economic opportunity
- **Indicators considered by the report for ranking**: Mobility, Workplace, Pay, Marriage, Parenthood, Entrepreneurship etc.

Issues faced by working women (as per the Report):

Global:

- Women enjoy only **77% of** the legal rights that men do
- At the current pace, it would take at least 50 years to approach legal gender equality everywhere

India:

- Laws affecting pay, pension, inheritance, and property rights
- Laws affecting women's work after having children
- Constraints on women starting and running a business

Suggestions by the report:

- India considers reforms to improve legal equality for women
- India should consider mandating equal remuneration for work of equal value
- Allowing women to work at night in the same way as men (Several State Governments including Karnataka, UP has allowed factories to employ women on night shifts)
- Allowing women to work in industrial jobs in the same way as men

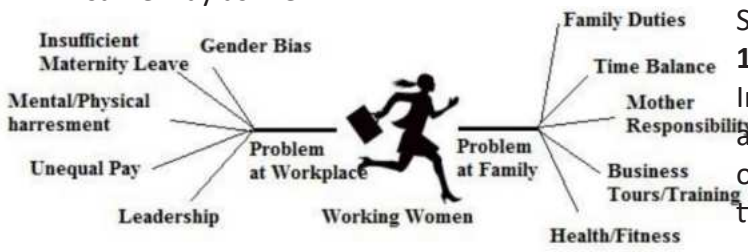


Figure 1 – Challenges faced by Working Women

SWACHH SUJAL SHAKTI SAMMAN 2023

Context:

President of India presented the **Swachh Sujal Shakti Samman 2023** and graced the launch of Jal Shakti Abhiyan: Catch The Rain -2023 in New Delhi.

- The award is given for remarkable contributions by women leaders at the grass-root level **(Women Champions)** who have contributed exceptionally to **ODF Plus Model Villages, Har Ghar Jal Villages,** Swachh Bharat Mission (Grameen), Jal Jeevan Mission, and National Water Mission.
- **Ministry**: Ministry of Jal Shakti

Example of work done: Women of the self-help group from Khadki village of Burhanpur district of Madhya Pradesh came together to ensure tap connection to every house of the village.

About the Catch the Rain campaign ("Catch the rain, where it falls, when it falls")

- It encourages **all stakeholders to create rainwater harvesting structures (RWHS)** from March 22 to November 30 (from Pre Monsoon to Post Monsoon Period).
- **Implementation**: National Water Mission(NWM), Ministry of Jal Shakti
- **Coverage**: In both rural and urban areas.
- States have been requested to open **Rain Centers in each district,** to provide technical guidance in the Rainwater harvesting system (RWHS).

SWAMIH INVESTMENT FUND

Context:

SWAMIH has so far provided **final approval to about 130 projects** with sanctions worth over Rs 12,000 crore. In **three years since its inception in 2019,** the Fund has already completed 20,557 homes and aims to complete over 81,000 homes in the next three years across 30 tier 1 and 2 cities.

About SWAMIH Fund:

- The **Special Window for Affordable and Mid-Income Housing (SWAMIH) Investment Fund I** is a social impact fund **specifically formed for**

completing stressed and stalled residential projects.

- The Fund is sponsored by the **Ministry of Finance, Government of India,** and is managed by **SBICAP Ventures Ltd., a State Bank Group company.**
- The fund considers **first-time developers, established developers with troubled projects, developers with a poor track record of stalled projects, customer complaints and NPA accounts**, and even **projects where there are litigation issues**
- It is considered **the lender of last resort for distressed projects.**
- The Fund's presence in a project **often acts as a catalyst for better collections and sales primarily in projects that were delayed for years.**

HALLMARK UNIQUE IDENTIFICATION NUMBER (HUID)

Context:

Bureau of India Standards (BIS) has **prohibited the sale of hallmarked gold jewellery or gold artefacts without a 6-digit alphanumeric Hallmark Unique Identification Number (HUID)** after 31st March 2023.

- HUID in accordance with the **Indian Standards specified in IS 1417: 2016 as amended.**
- **Hallmarked jewellery lying with consumers as per old schemes shall remain valid.**

About Hallmarking:

- Hallmarking scheme was started **by BIS in the year 2000**.
- Mandatory Hallmarking has been successfully implemented **with effect from 23 June 2021 vide Hallmarking of Gold Jewellery and Gold Artefacts Order, 2022, and its amendment dated 04 March 2022**.
- Before the **implementation of 6-digit Hallmark Unique Identification (HUID) number,** hallmarking of gold jewellery consisted of **4 logos viz, the BIS logo, purity of the article as well as logo of the jeweller and Assaying and Hallmarking Centre.**
- After the introduction of HUID, the hallmark consists **of 3 marks viz, BIS logo, purity of the article and six-digit alphanumeric HUID**.
- A consumer can check and authenticate hallmarked gold jewellery items with a HUID number using **'verify HUID' in BIS CARE app** which is available on both Android as well as iOS.

Why Hallmarking:

- Maintain the quality of gold in the market.
- Consumer protection.

CHIP REDESIGN TO OPTIMIZE SERVER OPS, WATER TO KEEP COOL

Context:

Data centres and the Cloud are major energy consumers, **with most of the energy consumed in keeping the servers cool, rather than processing data.**

New design:

- A new server architecture is being developed at the **Swiss Federal Institute of Technology Lausanne experiments with what is called a "multicore architecture template with an integrated on-chip microfluidic fuel cell network**" to draw heat out of a stacked chip and cool it faster without overheating.
- This technology aims to **improve server efficiency and drastically improve energy efficiency, reducing carbon footprint.**

Other technology solutions being tried globally include

Subsea Cloud's proposal to put commercial data centres in deep ocean waters, and **Microsoft's plan to build a tube with closed ends, placing servers inside and dropping the tube down to the ocean floor.**

INDIAN RAILWAYS TIES UP WITH ISRO FOR REAL-TIME TRAIN TRACKING

Context:

The Indian Railways is harnessing the **power of data analytics for integrated transportation.** It has commenced a project, which will **now enable real-time tracking of train movements with the assistance of satellite imagery under the Real Time Train Information System (RTIS) project.**

How will it work:

- **Railways will take technology help from ISRO.**
- ISRO has developed its **own regional navigation satellite system** called **Navigation with Indian Constellation (NavIC) and Bhuvan,** a web-based utility **which allows users to explore a set of map-based content being deployed for tracking.**

Benefits:

- Real-time tracking of trains is **useful during accidents, floods and landslides** when there is a need to pin down the train's exact location for rendering help.
- On-time services.

HAR PAYMENT DIGITAL MISSION

Context:

RBI has launched the 'Har Payment Digital' mission during Digital Payments Awareness Week (DPAW) 2023.

About the Mission

Under the mission **Payment System Operators (PSOs)** will adopt 75 villages across the country and conduct **camps in each of these villages** with an aim to improve awareness and onboard merchants for digital payments (thus making them Digital payment enabled villages).

About PSOs:

PSOs are entities (currently there are 67 PSOs e.g. NPCI) authorised by RBI to set up and operate a payment system.

SEBI FRAMEWORK FOR ADOPTING CLOUD SERVICES

Context:

The Securities and Exchange Board of India (Sebi) has unveiled a framework for the adoption of cloud services by stock exchanges, clearing corporations and other regulated entities (REs) including depositories, and stock brokers.

Keypoints of the framework:

- It highlights the **key risks and mandatory control measures** that REs need to put in place before adopting cloud computing.
- It also sets out the **regulatory and legal compliances** by REs if they adopt such solutions. The framework covers **Governance, Risk and Compliance (GRC), selection of Cloud Service Providers (CSPs), data ownership and data localisation, etc.**
- The document will **come into force immediately** for all new or proposed cloud onboarding assignments or projects of the REs.
- **Existing REs** that are currently using cloud services, should comply with the framework within 12 months.

What is Cloud Service?

Cloud computing is the on-demand availability of computer system resources, especially data storage and computing power.

Advantages:

- The cloud delivers **more flexibility and reliability**, increased performance and efficiency, and helps to lower IT costs.
- **It also improves innovation, allowing faster time** to market and incorporating AI and machine learning use cases into their strategies.
- It gives the advantages of being ready to scale, ease of deployment, no overhead of maintaining physical infrastructure etc.

Concerns:
cyber security risks, deployment issues, awareness,

GOVT BRINGS CRYPTO UNDER MONEY LAUNDERING LAW

Context:
Ministry of Finance has brought crypto trading, safe-keeping, and related financial services under the ambit of the Prevention of Money Laundering Act.

- **Objective**: It will give authorities greater power to monitor the transfer of virtual digital assets beyond the country's borders
- **Reporting Entity:** Entities dealing in VDAs will now be considered 'reporting entities' under PMLA and subsequently must maintain KYC details of their clients and beneficial owners

Transactions included under PMLA:
- Exchange between virtual digital assets and fiat currencies
- Exchange between one or more forms of virtual digital assets
- Transfer of virtual digital assets, safekeeping, or administration of virtual digital assets

What are Virtual Digital Assets (VDA)?
The term **'virtual asset'** refers to any digital representation of value that can be digitally traded, transferred or used for payment.

- The notification says that the **definition of 'virtual assets'** would be the same as that in the **Income-Tax Act**, (it includes cryptocurrencies and non-fungible tokens as virtual assets)

JANAUSHADHI KENDRA

Context:
On the occasion of **'the 5th Jan Aushadhi Diwas'**, the government inaugurated 'NaMo Day Care Centre' and flagged off four NaMo Mobile Healthcare Units

- The Department of Pharmaceuticals is celebrating Jan Aushadhi Diwas from **March 1 to March 7, 2023**, to create awareness about the Jan Aushadhi Scheme.
- **Objective**: To generate awareness about the usage of generic medicines and the benefits of Jan Aushadhi Pariyojana and its salient features and achievements.

About Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP):
The scheme aims to open centres from where quality generic medicines, consumables and surgical items are available at affordable prices for all, so as to reduce the out-of-pocket expenditure of consumers/patients.

- **Ministry**: Department of Pharmaceuticals, Ministry of Chemicals & Fertilizers
- **Implementation Agency**: Pharma & Medical Bureau of India (PMBI) (erstwhile Bureau of Pharma PSUs in India (BPPI)). It has also developed the **Janaushadhi Sugam Application**.

- **Launched**: November 2008
- **Current status:** As of January 31, 2023, the number of stores has increased to 9082.
- **Target**: To increase the number of Kendras (PMBJKs) to 10,000 by the end of December 2023.

How price of medicine is determined in the PMBJKs?

A medicine is priced on the principle of **a maximum of 50% of the average price** of the **top three brands of branded medicines**. Thus, the prices of Jan Aushadhi Medicines are cheaper by at least 50% and in some cases, by 80% to 90% of the market price of the branded medicines.

- Under the Scheme, **medicines are procured from World Health Organization** – Good Manufacturing Practices (WHO-GMP) certified suppliers for ensuring the quality of the products.

INDIA, U.S. TO LAUNCH A SEMICONDUCTOR SUB-COMMITTEE

Context: A Memorandum of Understanding (MoU) on **establishing a semiconductor supply chain and innovation partnership under the framework of India – US Commercial Dialogue** was signed between the two countries.

- The MoU seeks to establish a **collaborative mechanism between the two governments on Semiconductor Supply chain resiliency and diversification in view of the US's CHIPS and Science Act and India's Semiconductor Mission.**

Benefits:

- It aims to **leverage the complementary strengths of both countries and facilitate commercial opportunities and the development of semiconductor innovation ecosystems** through discussions on various aspects of the semiconductor value chain.
- The MoU **envisages mutually beneficial R&D, talent, and skill development.**

This is part of the **U.S.-India initiative of Critical and Emerging Technology (iCET)** that will broaden the "**strategic technology partnership**".

About iCET:

- It was established **to elevate and expand our strategic technology partnership and defense industrial cooperation** between the country's governments, businesses, and academic institutions.

SEBI

Context:

SEBI has increased its authority in the **appointment of directors to stock exchanges and clearing corporations (CC)**.

New Rules:

- SEBI can now appoint **three public interest directors (PIDs)** to the board without requiring shareholder approval.
- Exchanges and CCs are required **to follow a "Chinese Wall" policy** to separate functions and appoint a chief risk officer to mitigate risks.

What are PIDs?

They are responsible for **safeguarding the public interest** and have a tenure of three years. PIDs will have **regular oversight over issues** such as governance standards and technology.

What is the Chinese wall policy?

It is a virtual information barrier erected between those having insider information about the company and those who do not, in order to prevent misuse of inside information in securities trading.

What are clearing houses (or CCs)?

A clearinghouse is a financial institution formed to facilitate the exchange of payments, securities, or derivatives transactions.

About SEBI

The Securities and Exchange Board of India (**non-statutory, est. 1988, HQ: Mumbai**) is the regulatory body for the securities and commodity market in India under the ownership of the Ministry of Finance.

MODERN AND SMART POWER TRANSMISSION SYSTEM

Context:

India will soon have a modern and smart power transmission system.

- The recommendations of a task force (2021) have been accepted by the Power Ministry.

What are transmission Networks?

Electric power transmission is the bulk movement of electrical energy from a generating site, such as a power plant, to an electrical substation. The interconnected lines that facilitate this movement form a transmission network.

Issues with the transmission network: India faces high aggregate technical and commercial losses (AT&C) **(around 17%, China's is low at 5%),** which causes power shortages for consumers. Additionally, low tariffs and cross-subsidization lead to a significant difference between the average cost of supply and the average revenue generated.

The features of smart power transmission will include:

- **Real-time monitoring** and automated operation of the grid
- **Operation of Substations** by using modern systems like SCADA, Flexible AC Transmission devices (FACTs)
- **Predictive maintenance** using AI/ML algorithms
- **Use of Robots & Drones** in the construction and inspection of transmission assets
- **Better situational assessment**
- Capability to have an **increased share of renewable capacity** in the power-mix
- Greater resilience **against cyber-attacks** as well as natural disasters
- **Centralized and data**-driven decision-making
- **Reduction in forced outages** through self-correcting systems

Significance:

It will reduce operations and management costs for utilities and ultimately lower power costs for consumers. It will help meet the government's vision of providing 24x7 reliable and affordable power and meeting sustainability goals.

Central Electricity Authority (CEA, a **statutory** body under the Ministry of Power) will formulate standards and guidelines as per the recommendation.

Agriculture

DEMAND FOR APPLES RISES

Issues with Apple farming:

- **High cost of production**: Due to rising input costs and high taxation
- **No legally guaranteed procurement** at an MSP (only J&K has MSP on apple)
- **Higher imports of apples:** It creates a glut in the domestic market and lowers the profit for farmers.

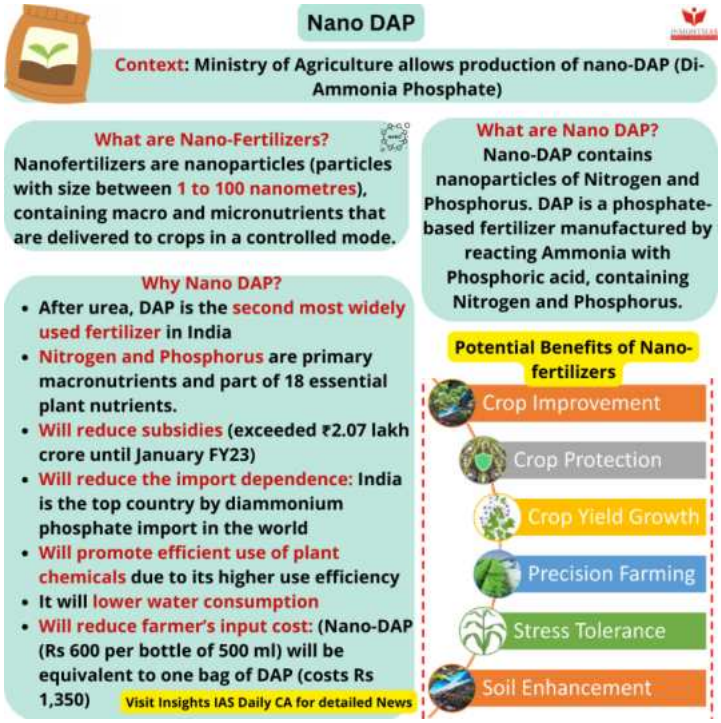
3-YEAR APPROVAL TO NANO-DAP

Context:

Ministry of Agriculture has allowed **IFFCO and Coromandel International (a private company)** to start production of **nano-DAP (**Di-Ammonia Phosphate**)** for three years.

- Also, DAP has been notified in the **Fertilizer Control Order**, thus paving the way for its early commercial release for farmers.
- In 2021, **IFFCO launched Nano-Urea**

- The government will also **launch nano-potash, nano-zinc and nano-copper** fertilizers in future



Concerns regarding the use of Nano DAP:

- May lead to **nanoparticles contamination in soil** and crops from continued nanoparticles use
- This may lead to **health Hazards** from nano-size particles at higher concentrations.

About IFFCO:

Indian Farmers Fertiliser Cooperative Limited (IFFCO) (est. 1967, HQ: New Delhi), is a multi-state cooperative society, that is wholly owned by the Cooperative Societies of India. Society is engaged in the business of manufacturing and marketing fertilizers.

About Fertilizer Control Order (FCO):

The order lays down quality, specification, licensing and other requirements for fertilizers in India. It has been issued under the **Essential Commodities Act 1955** and administered by the Ministry of Agriculture.

Q. Consider the following statements regarding Nano Urea Liquid (UPSC 2020)

1. Nano Urea Liquid was first developed by the Council of Scientific and Industrial Research (CSIR)
2. India is the first country globally to start commercial production of Nano Urea

Which of the above statements is/are correct?

[A] 1 only

[B] 2 only

[C] Both 1 and 2

[D] Neither 1 nor 2

Answer: B

Nano Urea Liquid has been developed by IFFCO. India is the first country globally to start commercial production of Nano Urea

ANTIBIOTIC DRUGS ON LIVESTOCK

Context:

Researchers at the Indian Institute of Science (IISc), have found that **grazing by livestock leads to lower carbon storage in soil compared to grazing by wild herbivores.**

- Researchers found that this **difference appears to be due to the use of veterinary antibiotics such as tetracycline on livestock.**

More about the study:

- The researchers said that when released into the soil through dung and urine**, these antibiotics alter the microbial communities in the soil in ways that are detrimental to sequestering carbon.**
- The study states that although soils from the wild and livestock areas had many similarities, they differed in one key parameter called **carbon use efficiency (CUE), which determines the ability of microbes to store carbon in the soil. The soil in the livestock areas had 19% lower CUE.**

About Tetracycline:

- Antibiotics such as **tetracycline are long-lived and can linger in the soil for decades**.
- Its use in **cats, dogs, small mammals, horses, or birds to treat bacterial infections or other con-**

ditions is 'off label' or 'extra label'.

Science and Technology

LEWIS SUPERACID

Context:

Researchers at **Paderborn University, Germany** have reported being able to make a **unique class of catalysts** – used in chemistry to accelerate reactions – **called "Lewis super-acids"**

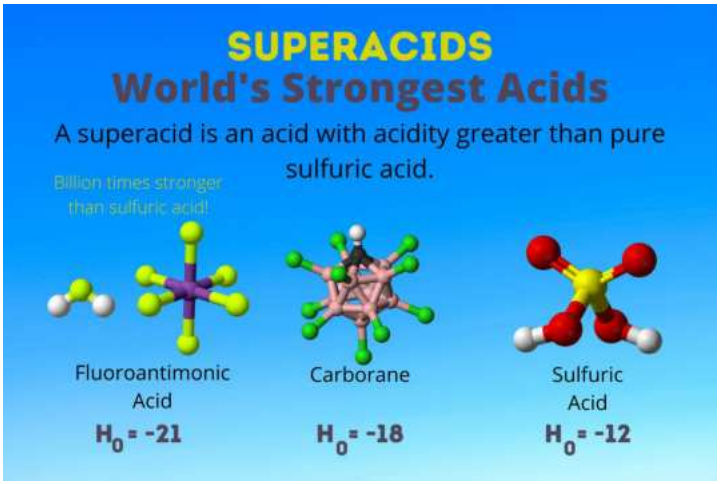
- These can be used to **break strong chemical bonds and speed up reactions.**

What are Lewis Acids and Bases?

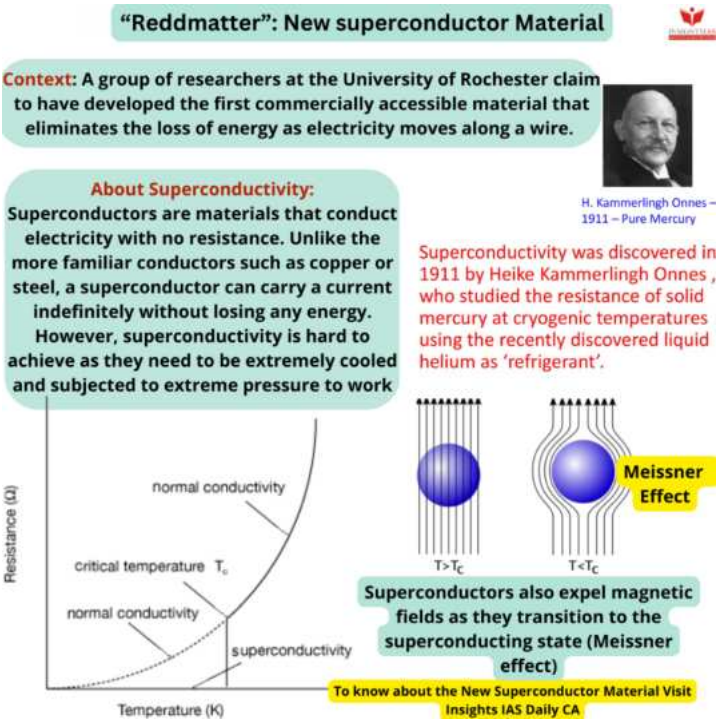
- A Lewis acid is any substance, such **as a Hydrogen ion (H+) that can accept a pair of nonbonding electrons.** In other words, a **Lewis acid is an electron-pair acceptor.**
- A Lewis base is any substance, **such as the OH- ion, that can donate a pair of nonbonding electrons. A Lewis base is therefore an electron-pair donor.**

Applicability:

Being able to make these super acids, **enables non-biodegradable fluorinated hydrocarbons,** similar to **Teflon, and possibly even climate-damaging greenhouse gases, such as Sulphur hexafluoride, to** be **converted back into sustainable chemicals**.



"REDDMATTER": NEW SUPER-CONDUCTOR MATERIAL



About the New Superconductor Material

- **Operating range**: Can operate at room temperature (21 degrees C) and much lower pressure (10,000 atmospheric pressure) than previously discovered superconducting materials.
- **Naming**: They named the resulting material "**reddmatter**," after observing how the material's hue changed from blue to pink to red as it got compressed.
- **Material**: It is formed by **combining lutetium (a rare earth metal) with hydrogen and nitrogen**
- **Applications**: The new superconductor could help create lossless electrical grids, and better and cheaper magnets for use in future nuclear fusion reactors, among other things.

SODIUM INTAKE

BIO-COMPUTERS

Context:

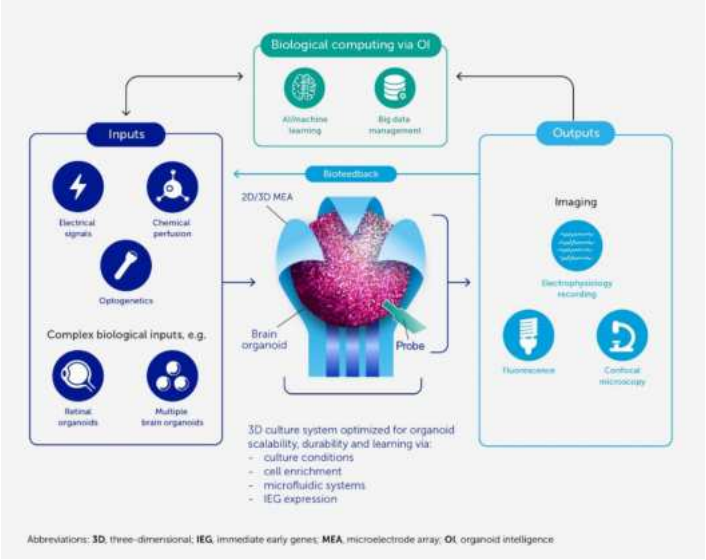
Scientists at Johns Hopkins University (JHU) recently outlined a potentially revolutionary new area of research called "organoid **intelligence**", which aims to create **"biocomputers": where brain cultures grown in the lab are coupled to real-world sensors and input/output devices.**

About Bio computers:

- Bio computers are **computing devices that use biological components** such as DNA, proteins, and cells to perform computational tasks. Bio-computers use the **properties of biological systems to perform computations, such as molecular recognition, self-assembly, and amplification.**
- Researchers coupled the organoids with machine learning by growing the organoids **inside flexible structures affixed with multiple electrodes (similar to the ones used to take EEG readings from the brain).**
- These structures will be able to **record the firing patterns of the neurons and also deliver electrical stimuli, to mimic sensory stimuli.** The response pattern of the neurons and their effect on human behaviour or biology will then be **analyzed by machine-learning techniques.**
- Recently, scientists **were able to grow human neurons on top of a microelectrode array** that could both record and stimulate these neurons.

Opportunities for 'bio-computers'

- They could also **help decode the pathology of drug development** for devastating **neurodevelopmental and degenerative diseases** such as Parkinson's disease and microcephaly.
- Their ability to perform **massively parallel computations, operate at the molecular level and potentially be more energy-efficient.**



Health

DISEASE CAUSED BY PROXIMITY TO PIGEON

Context:

Recently Thane Municipal Corporation (TMC) in Maharashtra warned people against feeding pigeons.

Diseases spread by proximity to Pigeon

- Pigeons may lead to various kinds of lung diseases, ranging from respiratory allergies to serious infections.
- Severe cases may lead to **Pneumonia-Psittacosis**, which is a bacterial infection
- **Hypersensitive pneumonia** (a lung disease which is contracted by living near pigeons) (also known as Pigeon Breeder's Disease)

- **Histoplasmosis** (fungal infection with high mortality rates)
- **Cryptococcal infections** (it may lead to pulmonary or meningeal infections)

Mode of transmission: The breathable antigen arising from the bird droppings and feathers goes into the lung and leads to an immunological reaction, which damages the lung.

SPECIAL PROTEINS TO REPAIR DAMAGED HEART CELLS

Context:

A group of scientists, at the Indian Institute of Technology, Guwahati, has come up with a solution where **healthy skin cells from an adult can be converted into heart cells using special proteins**.

More about the technology:

- According to scientists, **converting cells from one form to another – a.k.a. cellular reprogramming – involves specific proteins, called transcription factors**, that alter the "expression of genes within a cell and direct it to take on a new cellular identity".
- They developed a toolbox, which consists of six recombinant proteins: **GATA4, MEF2C, TBX5, ETS2, MESP1, and HAND2**.
- Each of these proteins plays a significant role in **reprogramming fibroblasts** – a type of cells that provides structure to tissue – **into cardiomyocytes**.
- The advantage of **recombinant proteins-based cell conversion** is they work their miracle inside the nucleus and eventually disappear over time **without leaving behind their toxic waste, unlike their genetic counterparts.** Thus, they are very safe for reprogramming compared to other approaches

H3N2 OUTBREAK

Context:

The Indian Council of Medical Research (ICMR) confirmed that the recent **outbreak of a respiratory illness** — with symptoms of **cold, sore throat and fever accompanied by fatigue is caused by Influenza Sub-type H3N2.**

- There are **four types of seasonal influenza viruses, types A, B, C and D**. Influenza A and B viruses circulate and cause seasonal epidemics of disease,

WHAT IS H3N2 VIRUS?

- H3N2 virus is a **type of influenza virus called the influenza A virus**. It is a respiratory viral infection that causes illnesses every year. **This subtype of influenza A virus was discovered in 1968 in humans.**
- The **virus derives from types of protein strains of the influenza A virus - hemagglutinin (HA) and neuraminidase (NA**).
- HA has over **18 different subtypes, each numbered H1 to H18 while NA has 11 different subtypes, each numbered N1 to N11. The H3N2 is a combination of the two protein strains of the influenza A virus.**

SYMPTOMS OF H3N2 VIRUS:

- The symptoms of the H3N2 **virus include cough, runny nose or congested nose, sore throat, headaches, body aches, fever, chills, fatigue, diarrhea, vomiting and breathlessness**.

TREATMENT FOR H3N2 VIRUS:

- Regular **over-the-counter medications for fever, cough or headaches can be consumed to relieve the symptoms**. Annual flu shots for the influenza virus should be administered and taken around this time.

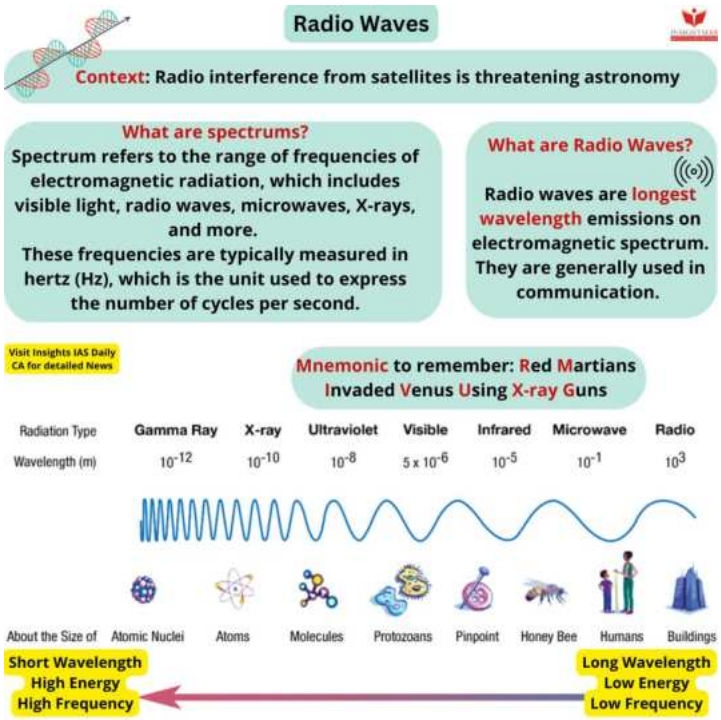
Space

RADIO INTERFERENCE FROM SATELLITES

Context:

Radio telescopes are used by astronomers to **study the universe**, but the growing number of satellites and wireless technologies is causing interference that could hide important data from these telescopes.

- E.g., satellite internet networks like **Starlink** and **OneWeb** have sent thousands of satellites which transmit radio waves to the surface



What is Radio Spectrum Pollution?

Radio Spectrum Pollution occurs when there is interference caused by **multiple signals occupying the same frequency range**.

- Radio signals arriving on Earth from astronomical objects are **extremely weak and easily masked** by man-made interference.
- This interference can **disrupt the transmission and reception of signals**, leading to poor or lost communication, and can interfere with astronomical observations. It can also potentially cause safety hazards in critical industries like aviation and emergency services.

Solutions:

Develop radio quiet zone (Such radio quiet zones are present in the USA, Australia, South Africa, and China).

- This will be similar to **Dark sky reserves (for light pollution) as found in Hanle Dark Sky Reserve (Ladakh)**

Related News:

Recently National Science day (Feb 28th) was celebrated to commemorate the announcement of the **discovery of the Raman effect** (also known as Raman Scattering) by Nobel laureate physicist **CV Raman in 1928**.

- Raman Effect is the **change in wavelength of light** that occurs when a light beam is deflected by molecules.
- **Uses of Raman Effect:** It is used to identify and analyze the chemical composition of materials; It is used in quantum theory; In remote sensing and planetary exploration.
- **The theme of NSD-2023** is "Global Science for Global Wellbeing"

NISAR SATELLITE

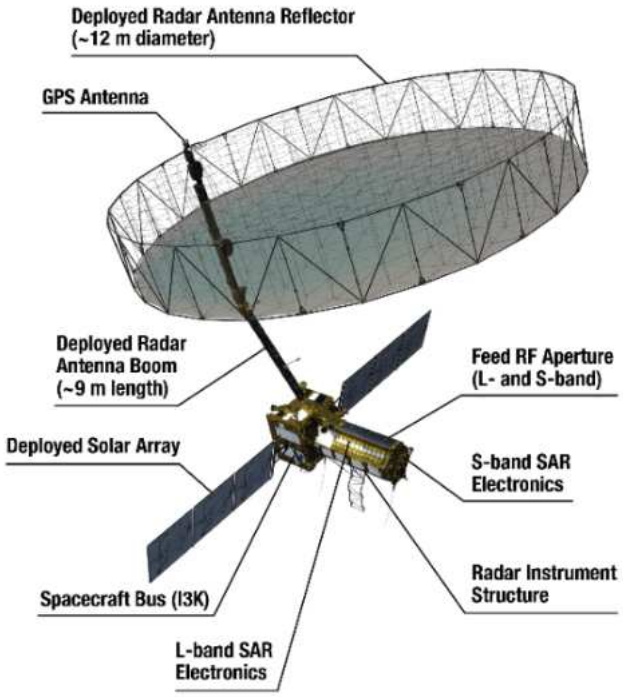
Context:

The US Air Force handed over NISAR, an earth observation satellite **jointly developed by NASA and ISRO, to the Indian space agency.**

- NISAR will be used by **ISRO for a variety of purposes like volcanic eruptions, agricultural mapping, landslide-prone areas etc.**

What is NISAR?

- The 2,800 kilograms satellite consists of both **L-band and S-band synthetic aperture radar (SAR)** instruments, which makes it a **dual-frequency imaging radar satellite.**
- While NASA has provided the **L-band radar, GPS, a high-capacity solid-state recorder to store data, and a payload data subsystem, ISRO has provided the S-band radar, the GSLV launch system and spacecraft.**
- Another important component of the satellite is its large **39-foot stationary antenna reflector**. Made of a gold-plated wire mesh, the reflector will be used to focus "**the radar signals emitted and received by the upward-facing feed on the instrument structure**"



- It accords varying degrees of **protection to over 37,000 species of animals and plants**, listed in three Appendices, depending on their level of threat (see infographic).
- It is further expanded into the **conservation of marine life and oceans,** and on collaborating with businesses and funding conservation activities.

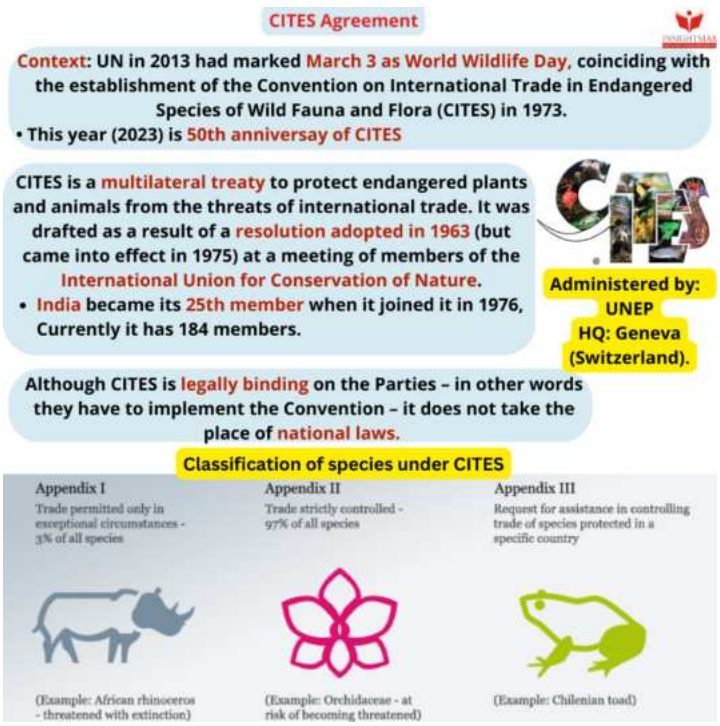
Permit System: All import, export and re-export of species covered under CITES must be authorised through a permit system.

COP: Every two years, the Conference of the Parties (CoP), the **supreme decision-making body of CITES,** applies a set of biological and trade criteria to evaluate proposals from parties to decide if a species should be in Appendix I or II.

- Recently, in November 2022, **CoP19 (also known as the World Wildlife Conference)** was held in Panama City.

Environment

50TH ANNIVERSARY OF CITES



Aim of the CITES: It is aimed at ensuring that international trade in specimens of wild animals and plants does not threaten the survival of the species.

Related News:

SC expands the jurisdiction of the Committee responsible for the Transfer of elephants

The Supreme Court of India has **expanded the jurisdiction of a high-powered committee (Verma Committee) responsible** for the **transfer and transportation of elephants bred** in captivity in the North-East.

Expanded Jurisdiction: The committee now has a **pan-India mandate to deal with the transfer, import into India, or procurement of wild animals by any rehabilitation centre** or zoo in the country, and can address any approval or grievance related to these issues.

Related News:

West African lion

Numbers: 120-374 West African lions are estimated to remain in the wild

Lions were recently classified into two subspecies:

1. **Panthera leo leo ('northern lion'):** Inhabiting west Africa, north Africa, West Asia, and India

IUCN: Critically Endangered

2. **Panthera leo melanochaita ('southern lion'):** Inhabits eastern and southern Africa

IUCN: Vulnerable

GOVT TO DEVELOP 23 RIVER SYSTEMS

Context:

Ministry of Ports, Shipping and Waterways has announced that as many as **23 river systems** will be developed for cargo and passenger vessel movement **Aim**: To utilise **inland waterways to improve cargo and passenger vessel movement** at cheap transportation costs.

What are National Waterways?

Any major navigable body of water, **having commercial and strategic importance** is declared a national waterway (thereby Central government holds the responsibility of developing it).

- As per the **National Waterways Act 2016**, **111 waterways** have been declared as National Waterways (NWs).
- **Ganga-Bhagirathi-Hooghly River System** (Allahabad to Haldia) was first NW declared in 1986.

Need: Inland waterways contribute only around **2% of India's internal freight** movement. India has about **14,500 km of navigable waterways** which comprise rivers, canals, backwaters, creeks, etc.

Benefits:

- Lower cost of freight movement (The cost of freight movement by road is **Rs 2.50 per ton-Km**, compared with **Rs 1.36 per KM** in the case of Railways and around **Rs 1.06 per KM** in waterways, as per RITES Report of 2014)
- **Eco-friendly** and reduced air pollution
- **Less maintenance**
- **Better connectivity** to the hinterland

Government Initiatives:

- **Jal Marg Vikas Project (JMVP)** (on the Haldia-Varanasi stretch of Ganga (part of NW-1)
- **Integrated National Waterways Transportation Grid** (to link many of the national waterways to each other and to roads, railways and major ports)
- Recently, **NW-68 between Panjim to Vasco on the Mandovi River in Goa** was completed.
- **Inland Vessels Act, 2021** replaces **Inland Vessels Act, 1917**
- **PANI** (Portal for Asset & Navigation Information) platform for river navigation and infrastructure information.

About IWAI

Inland Waterways Authority of India (statutory, est. 1986, HQ: Noida) is in charge of the waterways in India. It was constituted under **IWAI Act-1985** by the Parliament of India.

EUROPE PUSHING FOR A LUNAR TIME ZONE

Context:

With more **lunar missions than ever on the horizon**, the **European Space Agency wants to give the moon its own time zone.**

Need a time zone for the moon:

- To **streamline contact among the various countries and entities**, public and private, that are coordinating trips to and around the moon.
- While the space station does not have its own time zone, **it runs on Coordinated Universal Time, or UTC, which is meticulously based on atomic clocks.**
- Time on Earth is precisely tracked by atomic clocks, **but synchronizing time on the moon is tricky because clocks run faster there, gaining around 56 microseconds**, or millionths of a second, per day.

WATER ON EARTH

Context:

Astronomers using the Atacama Large Millimeter/submillimeter Array (ALMA) have discovered gaseous water in the planet-forming disc around the star V883 Orionis.

Significance of the discovery:

- The study confirms the idea that the **water in planetary systems formed** billions of years ago, before the Sun, in interstellar space, and has been inherited by both comets and Earth, relatively unchanged.

- The discovery supports the idea that the **water on earth is even older than the Sun**.

How did the Earth get its water?

Nearly 4 billion years ago, during the **Late Heavy Bombardment**, countless meteors rained down on the Earth and the Moon. Over time, these icy asteroids and comets delivered oceans to Earth, depositing the water directly to the surface.

About ALMA telescope:

The Atacama Large Millimeter/submillimeter Array (ALMA) is an international partnership of the EU, USA, Japan, Canada, Taiwan, Korea and Chile. It is a single telescope (located on the **Chajnantor plateau, in northern Chile**) with the aim of unravelling important astronomical mysteries, in search of our **Cosmic Origins**

ISLAND EFFECT

Foster's Rule (or Island Effect) is a rule in evolutionary biology describing how large-bodied species tend to downsize on islands while small-bodied species upsize.

- Members of a species get smaller or bigger depending on the resources available in the environment.

Example: A dwarf elephant the size of a Shetland pony once roamed the Mediterranean island of Cyprus. In the West Indies, a giant **rat-like rodent tipped** the scales at more than 400 pounds (180 kg), rivalling an American black bear.

A new study has found that the **arrival of people on the islands raised extinction rates more than tenfold.**

Islands account for up to **20% of land species and are biodiversity hotspots**, but they are under threat from hunting, habitat destruction, and the introduction of diseases and invasive predators by humans.

Climate Change

GLOBAL GREENHOUSE GAS MONITORING INFRASTRUCTURE (GGGMI)

Context:

The **U.N.'s World Meteorological Organization** has come up with **a new Global Greenhouse Gas Monitoring Infrastructure** that aims to provide better ways of **measuring planet-warming pollution and help inform policy choices.**

About the GGGMI:

- **Need:** The current global greenhouse gas (GHG) monitoring relies **heavily on research funding and capabilities,** which makes sustained monitoring challenging.
    - **The three major greenhouse gases are carbon dioxide, methane and nitrous oxide. Of those, CO2 accounts for around 66% of the warming effect on the climate.**
- **Working** The GGGMI will engage with the broader scientific community and other UN agencies involved in GHG monitoring activities.
- **Benefit**: The infrastructure will improve our understanding of the carbon cycle and provide critical and timely input to the UNFCCC processes.

The increase in **CO2 levels from 2020 to 2021 was higher than the average growth rate over the past decade,** and methane saw the biggest year-on-year jump since measurements.

The 2015 Paris Agreement on climate change saw countries agree to cap global warming at **"well below" two degrees Celsius (3.6 degrees Fahrenheit) above levels measured between 1850 and 1900 – and 1.5C if possible.**

About WMO:

The **World Meteorological Organization (est. 1950; HQ: Geneva)** is a **specialized agency** of the United Nations responsible for promoting international cooperation on atmospheric science, climatology, hydrology, and geophysics

Species in News

INTERNATIONAL BIG CAT ALLIANCE (IBCA)

Context:

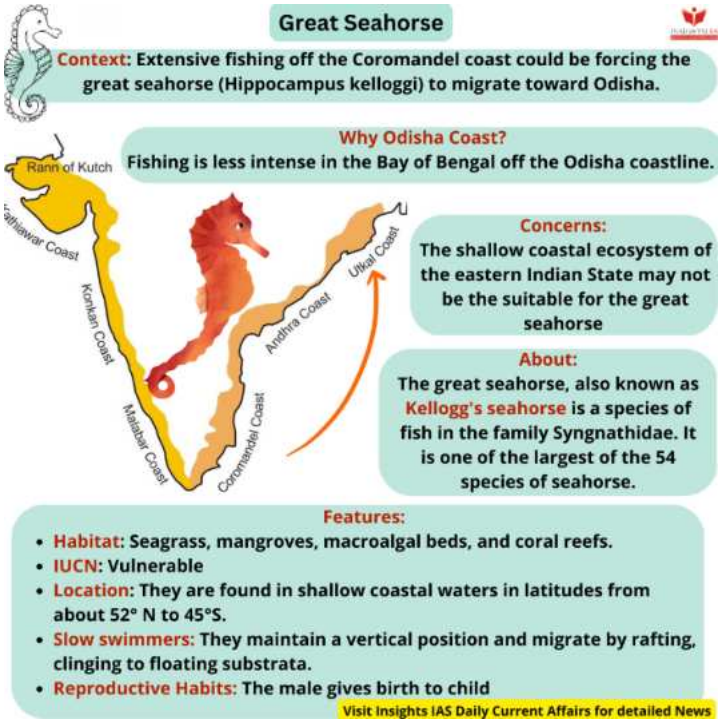
India has proposed to launch a mega global alliance under its leadership to protect big cats and assured support over five years with **guaranteed funding of $100 million**

About IBCA

- **Aim**:
  - Protection and conservation of the **seven major big cats — tiger, lion, leopard, snow leopard, puma, jaguar, and cheetah**.
  - To **provide a platform for** "dissemination of information on benchmarked practices, capacity building, resources repository, research and development, awareness creation", etc., on the protection and conservation of big cats.
- **Governance structure**:
  - **General Assembly** (consisting of all member countries)
  - **A council** (seven to 15 member countries elected by the General Assembly for a term of 5 years)
  - **A Secretariat** (headed by IBCA Secretary General for a specific term)
- **Funding**: 1st five years will be supported by India's "total grant assistance" of $100 million.
  - After that IBCA is expected to sustain itself through membership fees, and contributions from bilateral and multilateral institutions and the private sector. However, the proposed move has invited criticism, too.
- **Membership**: It will be open to 97 "range" countries, which contain the natural habitat of these big cats, as well as other interested nations, international organisations, etc.

India is the **only country in the world** to have tigers, lions, leopards, snow leopards and cheetahs in the wild. India has all the big cats, except **the pumas and jaguars**, today.

GREAT SEAHORSE



Q. Consider the following animals: (UPSC 2013)

1. Sea cow
2. Sea horse
3. Sea lion

Which of the above is/are mammal/mammals?

(a) 1 only
(b) 1 and 3 only
(c) 2 and 3 only
(d) 1, 2 and 3

Ans: B

A sea cow is a sea-grass-eating marine mammal. Sea horses are tiny fish. Sea lions are marine or aquatic mammals.

SCRUB TYPHUS

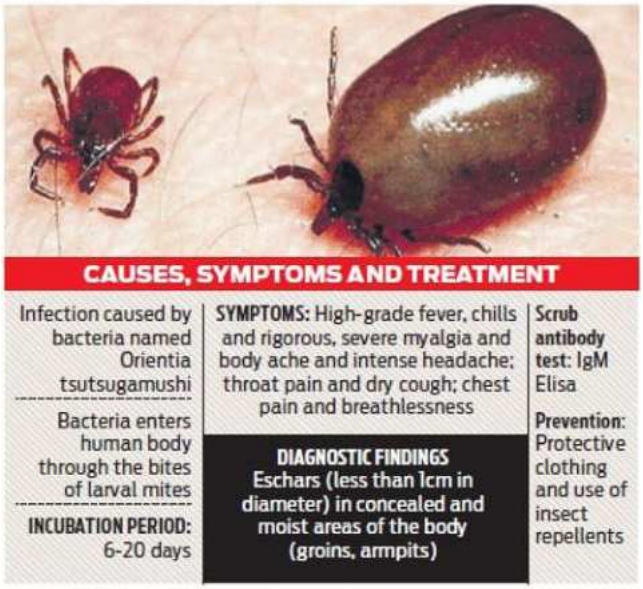
Context:

A team of Indian scientists has identified a **significantly more effective treatment for severe scrub typhus**— a life-threatening **bacterial infection** that kills thousands of people every year.

- Treating patients with a combination of **intravenous antibiotics doxycycline and azithromycin** is **more effective than the current monotherapy of using either drug alone.**

About Scrub typhus:

- Scrub typhus — a **life-threatening infection caused by Orientia tsutsugamushi bacteria** — is a major public health threat in **South and Southeast Asia**.
- As per estimates, **nearly one million cases are reported from South and Southeast Asia with 10% mortality**.
- India is one of the hotspots **with at least 25% of the disease burden**.



Defence

MEDIUM RANGE SURFACE-TO-AIR MISSILE (MRSAM) AND BRAHMOS

Context:

The Indian Navy has carried out a successful test-firing of a Medium Range Surface-to-Air Missile (MRSAM) and a ship-launched version of BrahMos missile

About BrahMos:

BrahMos is a **medium-range ramjet supersonic cruise missile** (two-stage missile —Solid+ Liquid propellant) that can be launched from a submarine, ship, aircraft, or land having a range of 450 km.

- It is a joint venture of **India and Russia** and it's named after the rivers Brahmaputra and Moskva.
- Operates **on Fire and Forgets principle**

About MRSAM:

MRSAM weapon system which is also called the **'Abhra' Weapon System** is a state-of-the-art medium-range air defence weapon system and is a joint venture of **DRDO** and **Israeli Aerospace Industries (IAI)** and produced at Bharat Dynamics Limited (BDL).

It is designed to **destroy hostile aircraft, helicopters cruise missiles and drones** at a 70km range

Significance:

The test firing **validated the capability to engage** the weapon as an anti-ship missile.

TROPEX

The Indian Navy's major Operational level exercise TROPEX for the year 2023, conducted across the expanse of the Indian Ocean, over a duration of four months from November 2022 to March 2023, culminated this week in the Arabian Sea.

- The exercise included the **coastal defence exercise Sea Vigil** and the **amphibious exercise AMPHEX**

Related News:

FRINJEX-23

The maiden Joint Military Exercise FRINJEX-23 between **Indian Army and French Army** will be conducted in **Kerala's Thiruvananthapuram recently**

Other exercises between India and France:

- **Varuna** – Naval exercise
- **Desert Knight-21 and Garuda** (Air exercise)
- **Shakti** – Army exercise

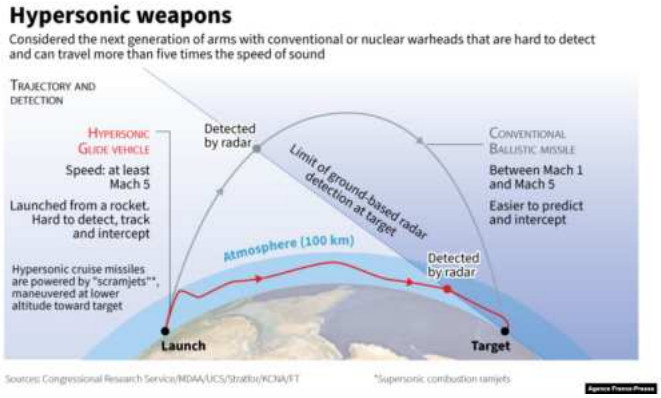
HYPERSONIC MISSILES

Context:

Russia unleashed its biggest aerial strike against Ukraine, hitting critical infrastructure. Among a varied range of powerful missiles launched by Moscow, **there were six hypersonic missiles, known as Kinzhals, or Daggers.**

What is a hypersonic missile?

- A hypersonic missile, such as Kinzhal, is **capable of flying at least at the speed of Mach 5, i.e. five times the speed of sound, and is maneuverable**.
- The **maneuverability of the hypersonic missile is what differentiates it from a ballistic missile**, as the latter follows a set course or a ballistic trajectory.
- This makes **them extremely lethal because, by the time they are detected by ground-based radars, they are already quite near to their target.**
- There are **two types of hypersonic weapons systems**: Hypersonic Glide Vehicles (HGV) and Hypersonic Cruise Missiles. The HGVs are fired from a rocket before gliding to the intended target while the hypersonic cruise missile is powered by air-breathing high-speed engines or 'scramjets' after acquiring their target.



About Kinzhal:

- Kinzhal, can reach **speeds of Mach 10 and greater**, with a range of about 1,250 miles. The missile is also **believed to be nuclear-capable and is usually launched by MiG-31 warplanes.**
- Apart from Kinzal, Moscow reportedly has two other types of hypersonic missile systems. **One is the Avangard hypersonic glide vehicle, which can fly at speeds as high as Mach 27. And the other is the Zircon anti-ship missile**.

CONTENT FOR MAINS ENRICHMENT (ETHICS/ ESSAY):

One Nation One Challan	Virtual traffic courts in the Gujarat on the cards under the One Nation, One Challan initiative. • Aim: To bring all agencies related to traffic violations on one platform for seamless collection of challans and data transfer. • Process: The system involves detecting traffic violations through the CCTV network and generating e-challans that are sent to the mobile number linked with the vehicle. Virtual traffic courts will be automatically notified if the challan amount is not paid within 90 days.

Mission Hariyali	• It is a volunteer-led initiative in Nalanda district, Bihar where the volunteers distribute 500-600 saplings daily in public places, schools, and markets, encouraging children and elders to take a plant home and plant it in available common spaces. Impact: It has facilitated the planting of over 1 million fruit trees in since 2016. The return of trees in Nalanda has had multiple benefits, including a rise in fruit production and the potential for residents to sell the produce for income.
	The world's first 200-meter-long Bamboo Crash Barrier, named Bahu Balli, has been installed on the Vani-Warora Highway in Maharashtra, India. Material: The bamboo species used is Bambusa Balcoa, which has been treated with creosote oil and coated with recycled High-Density Poly Ethylene (HDPE). Significance: Will create more avenues for the bamboo industry in India and it provides an alternative to steel barriers, addresses environmental concerns, and is a rural and agriculture-friendly industry. About Bamboo: Bamboos are a diverse group of mostly evergreen perennial flowering grasses (it is no longer considered a 'tree' in India). Madhya Pradesh is the largest producer of bamboo in India. More than 50% of the bamboo species are found in northeast India alone. China has the largest diversity (India's the 2nd largest) and is the largest producer of Bamboo in the world.
Women in Mining	Eastern Coalfields Ltd. (ECL), a subsidiary of Coal India Ltd. (CIL), is one of the top employers of women in traditional male-dominated mining activities. • In 2019, the Central government opened underground mining for women.
Group Captain Shaliza Dhami	The Indian Air Force has announced the appointment of Group Captain Shaliza Dhami as the first woman officer to command a missile squadron in the Western sector facing Pakistan. • There are over 10,000 women officers serving in the armed forces, with the majority serving in the medical services. • Also, Captain Shiva Chouhan has become the first woman officer in the Indian Army to be deployed at the Siachen glacier.
Rashsundari Devi	Rashsundari Devi's "Amar Jiban" (My Life) is the first full-scale autobiography written by an Indian woman, published in 1876. Rashsundari was an upper-caste Bengali woman who had no formal education and was not allowed to learn to read. However, at the age of 25, she taught herself to read in secret. Her book was an act of rebellion against social norms and a means to understand what women of the 19th century were thinking about their everyday lives.

Waste to wealth	• Indian Prime Minister praised Bengaluru-based senior cardiologist, Dr Deepak Krishnamurthy and his son for their efforts in promoting recycling and the concept of 'waste to wealth'. • Dr Krishnamurthy had shared on social media that his son collects used sheets of paper from his notebooks and the doctor gets them bound for rough work and practice.
"Hallucinations": Limitations and challenges of AI chatbots	• Example 1: A business Insider journalist asked ChatGPT to rewrite an article about a Jeep factory idling production due to rising costs of electric vehicle production in the US, and ChatGPT produced a nearly perfect piece with fake quotes from the CEO that sounded authentic. • Example 2: Chatbot Microsoft introduced to its Bing search engine was disseminating a variety of false information about the Gap, Mexican nightlife, the musician, and Billie Eilis. • Example 3: Google introduced "Bard". But its shares plummeted by more than $100 billion after Bard gave an "incorrect" answer in a demonstration. • Example 4: In 2016, Microsoft apologized after a Twitter chatbot, Tay, began generating racist and sexist messages • Example 5: Meta's BlenderBot was telling journalists it had deleted its Facebook account after learning about the company's privacy scandals. Reasons for AI chatbots giving wrong information: AI models are based on vast amounts of digital text extracted from the internet, which can contain untruthful, biased, or outdated information.
An Environment of Gender Equality	Supriya Sahu, the Additional Chief Secretary to the Government, Department of Environment, Climate Change, is leading Tamil Nadu's fight against climate change. She believes that women bring a certain sensitivity and understanding to climate change issues and that climate actions must benefit women. Tamil Nadu has launched several initiatives: • Promoting climate literacy by creating educational videos and social media posts on climate change in the Tamil language. • The Green Fellowship program and the Meendum Manjappai program are initiatives that aim to empower women and provide them with opportunities to work on environmental issues and earn a decent income Encouraging the use of eco-friendly shopping bags

Zero-dose children	Children, esp. in developing and poor countries, miss out on important vaccine shots, also known as zero-dose (one in eight children was zero-dose — not received a vaccine of any kind) Strategies to address this problem: • Involving Communities in immunization and awareness: E.g. Using traditional systems such as community leaders, and local people from communities as immunization vanguards. • Using technology: E.g. Zipline, a service that uses drones to deliver vaccines in flooded and hard-to-reach areas • Mobile vaccination clinics to increase access • School-based vaccination programs for adolescents who may be less likely to visit a healthcare provider regularly. • Text message reminders to reduce missed appointments and increase vaccine uptake. • Social media campaigns
Inter-Village Tea Garden Cleanliness Competition	148 villages and 24 tea gardens in Assam's Khumtai Assembly constituency are taking part in an "Inter-Village Tea Garden Cleanliness Competition." • Objective: Participating villages must clear the plastic waste and improve cleanliness throughout the villages. • Reward: The winning gets a one-km concrete road and other cash prizes worth lakhs for developmental activities from the MLA fund. CM of Assam will announce the winner. The idea behind the competition is to promote rural tourism in the region, as tourist footfall is an essential part of promoting economic growth in the area.
Parental Leave	Spain became the first country in the world to give mothers and fathers the same parental leave: 16 weeks, non-transferable and fully paid, in January 2021. New research suggests that most men are taking their paternity leave, which could boost shared responsibility for childcare. Some companies are introducing measures to encourage male employees to take care of their children, such as offering workshops on co-responsibility and changing business and family dynamics. The above example shows values of Gender equality, Cultural change in the perception of men's role in childcare, Work-life balance, Changing traditional gender roles and stereotypes, etc.

Our founder & director, Vinay Sir, with 120 toppers of UPSC CSE-2021 at the Felicitation Ceremony conducted at Bengaluru.

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CLASSES	The next day, the teacher will conduct the class on that particular syllabus.
PRACTICE	After the class, there will be a prelims & mains test (5-10 MCQs + 1 Mains question) based on topics taught. This will be a home assignment.
DISCUSSION	Our teachers will discuss the answers in the class the next day. This will quell your doubts and help you gain conceptual clarity.
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STUDY GROUPS	Groups will be formed based on common optional subjects.
STUDY	After group discussion, you will proceed to prepare for the next class and tests.
CURRENT AFFAIRS CLASSES	Will be conducted on a weekly basis every Saturday.
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WEEKLY FULL-LENGTH IRPM (INTEGRATED REVISION PRELIMS CUM MAINS) TESTS	The IRPM Full-length Tests will be conducted every week on Sundays.
WEEKLY ESSAY TESTS	Essay FLTs will be conducted on alternate Saturdays.
WEEKLY ETHICS TESTS	Ethics Tests will be conducted on alternate Saturdays.
CURRENT AFFAIRS TESTS	CA FLTs will be conducted after each subject is completed.
STUDY BREAKS	We will give nearly a week's break after each subject is completed. This will enable you to revise the subject fully.

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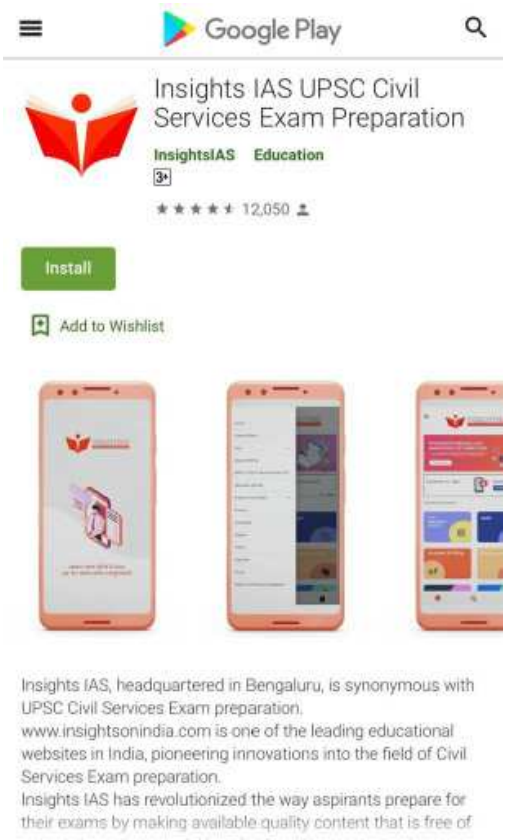

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