



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

KELP FORESTS

Kelp Forests are underwater ecosystems formed in shallow water by the dense growth of several different species. According to a new study, Kelp forests (large brown algae seaweeds) are declining because of climate change.

23 JANUARY - 28 JANUARY 2023

WEEKLY CURRENT AFFAIRS

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Indian Society - Diversity of India.

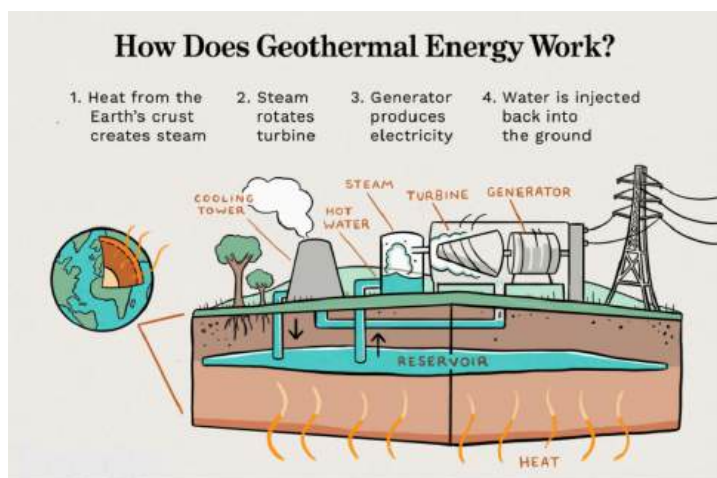
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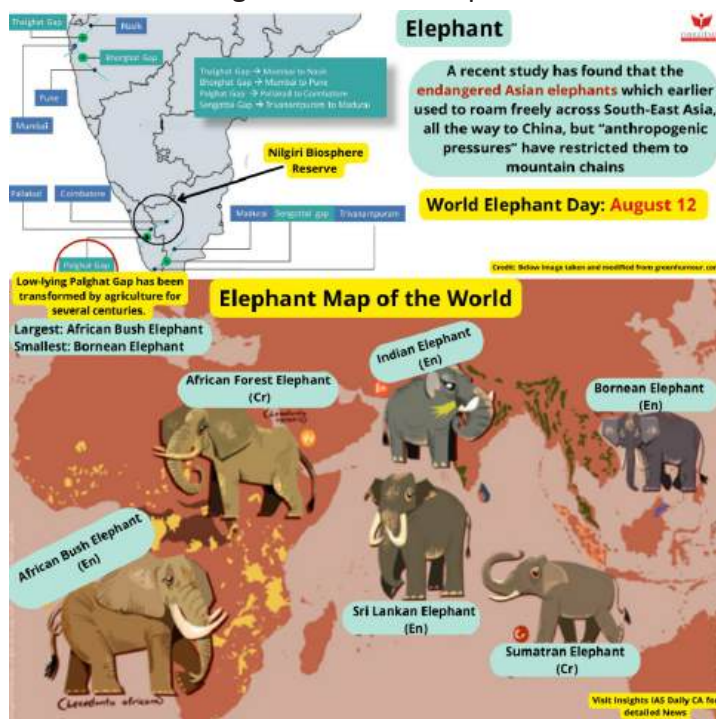
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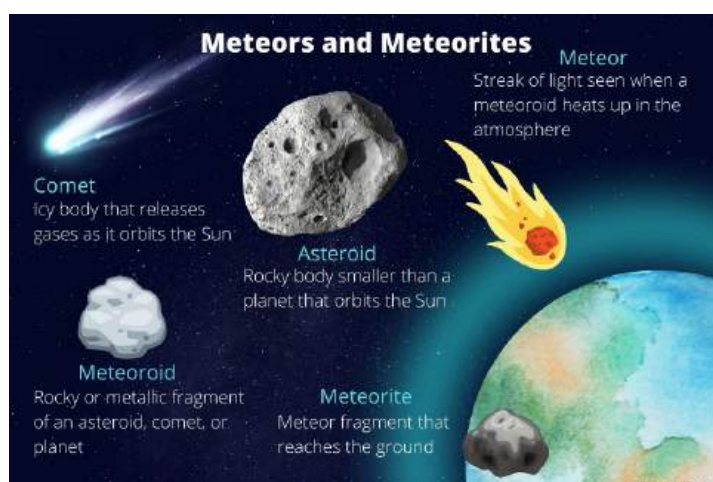
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GS1

Indian Society - Diversity of India.

REPUBLIC DAY PARADE: CELEBRATING SOVEREIGNTY

Context:

India celebrated her 74th Republic Day on 26th January.

Background:

- 1st parade, 1950: Held in the present day 'Major Dhyan Chand National Stadium'.
- The ceremony included the **official swearing-in of India's first President**, a marching contingent of over 3000 men, Liberator planes of the Indian Air Force flying overhead, etc.
- 1955 onwards: The parade shifted to Rajpath (now Kartavya Path).
- **The parade** from the former Viceroy's residence (Rashtrapati Bhawan now) to the memorial for British Indian soldiers (India Gate now) also underwent an Indianization process.

What's on the display at the 74th Republic Day parade in New Delhi?

- **Egyptian President** Abdel Fattah El-Sisi was the chief guest at this year's parade.
- The drive for **atma nirbharta or self-sufficiency** in India's military might. **For example**, the Indian Army showcased the Made-in-India main battle tank **Arjun**, the **NAG missile system**, the **K-9 Vajra-T gun system**, the **AKASH air defence system**, and the **Brahmos missile**. Also, this was the 1st time that no Russian weapons were on display.
- In a display of **women's empowerment**, the marching contingents of the Indian Air Force and the Indian Navy were led by women officers for the first time.
 - **Assam Rifles** — India's oldest paramilitary force, highlighted the message of gender equality.
 - The Navy's contingent also included three women and six men Agniveers, from the Agnipath scheme.

- The theme of **nari shakti or female power** carried beyond the armed forces contingents into the parade's cultural tableaux as well. **For example**,
 - Tripura's tableau focuses on women's role in creating sustainable livelihoods through tourism and organic farming.

Significance of the Republic Day military parade:

Display of power:

- There is a historical link between strong displays of soldiers and weaponry, **national pride and projection of power to the nationals and the world**.

Symbol of victory against colonial rule:

- The military parade was chosen as an integral part of Republic Day celebrations to mark the day as -
 - India's new constitution officially coming into effect
 - A day of victory (against colonial rule) for the Indian state and its people and the coming of a new, sovereign and strong republic

Significance of the non-military elements in the Republic Day parade:

A symbol of unity in diversity:

- The Republic Day parade includes non-military elements like the **iconic tableaux**.
- The tableaux are a way to **celebrate India's diversity**: and express regional identities while promoting a sense of national identity.

Culture on Display 2023: The different Themes of Tableaux are important facts for prelims.

State	Theme
Haryana	Bhagavad Gita
Karnataka	State's women Achievers: Salumarada Timakka, Sulagitti Narasamma and Tulasi Gowda Halakki
Uttar Pradesh	Deepotsav In Ayodhya
J&K	Amarnath Shrine
Jharkhand	Baidyanath Temple
Tripura	Mahamuni Buddha Mandir
Gujarat	Clean, Green and Efficient Gujarat
Ladakh	Tourism and Composite culture of the UT
Assam	Ahom warrior Lachit Borphukan
Andhra Pradesh	'Prabhala Teertham' — festival of peasantry during Makara Sankranti
Kerala	Karthiyayini Amma, winner of Nari Shakti Puraskar 2020
Arunachal Pradesh	Potential for Tourism
Uttarakhand	Corbett National Park and Almora's Jageshwar Dham
West Bengal	Durga Puja
Tamil Nadu	Women empowerment and culture of the state

Insta Links: [Egypt President in New Delhi for Republic Day: Significance of his visit, and India's ties with Egypt](#)

Social empowerment

MENSTRUAL LEAVE: TIME TO TALK PERIOD

Context:

Kerala government announced that to grant **menstrual leave for female students in all state universities** as part of the government's "commitment to realise a gender-just society"

- Girls of **age 18 years** and above are eligible to avail 60 days of menstrual leave in a year.
- The attendance percentage of girl students is sealed at **73% as against the usual 75%**.

Significance of the move:

- A move towards acknowledging and addressing the **often-debilitating pain and discomfort** that many are often forced to work through.
- Creating inclusive and accommodative classrooms and workplaces.

Concerns:

- **Create further discrimination** in a traditional society where menstruation remains a **taboo**, a special period leave could become another excuse for discrimination.
- Persistent risk of **medicalising a normal biological process**, which could further entrench existing biases against women.
- **Reluctance in hiring women** due to **perceived financial and productivity cost of mandatory period leaves**.

Previous efforts towards this direction:

The effort to introduce such policies in India is not new.
India:

- **1992:** Bihar government two days of menstrual leave a month
- **2017:** **Menstrual Benefits Bill 2017** was introduced in Parliament to provide monthly two days of menstrual leave to both public and private employees during menstruation.
- **2020:** Zomato introduced **menstrual leaves** for

up to ten days a year for its women and transgender employees.

Global:

- **Japan** was the first country to implement this policy in 1947.
- Globally, menstrual leave policies exist in countries like Japan, Taiwan, South Korea, China, Indonesia, Zambia, Sweden and Mexico.

InstaCurious:

Period poverty refers to the lack of access to menstrual hygiene products and education, which can have a negative impact on a person's health, education, and overall well-being. It can lead to health complications, the perpetuation of myths and taboos, absenteeism from school or work and can affect the education and economic opportunities of those who experience it.

Insta Links: [Menstruation Benefit Bill 2017](#)

Mains Links:

Q. Comment on the issue of mandatory menstrual leave and also analyse the design of a new framework for the same in our country. (15M)

Distribution of key resources

ONGC TO MAP INDIA'S GEOTHERMAL RESOURCES

Context:

ONGC plans to **map the geothermal energy sources of India**.

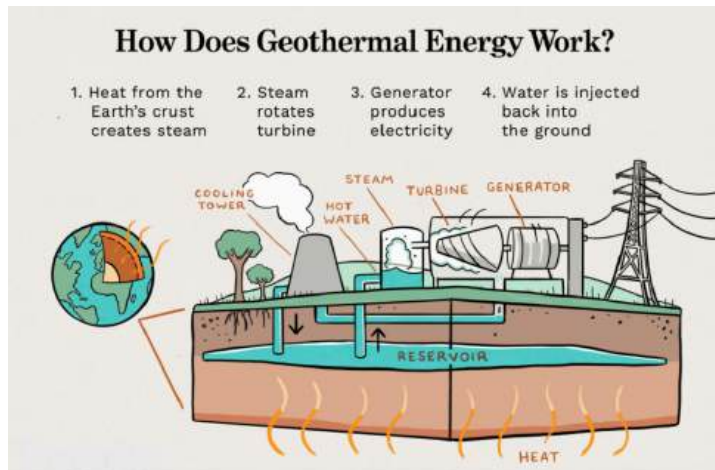
- The focus on geothermal energy is crucial to meet the **climate target of 500 GW of installed renewable energy capacity and net zero carbon emission by 2070**.
- ONGC's **diversification efforts** is a part of its 'Energy Strategy 2040'.

About Geothermal Energy:

- Geothermal energy is an energy source that is **stored in the form of heat beneath the earth's**

surface, which is clean, renewable, sustainable, carbon-free, continuous, uninterrupted, and environment-friendly.

- It is the only renewable energy available 24x7 to mankind not requiring storage and unaffected by day-night or seasonality variance.
- Geothermal resources in India have been mapped by the Geological Survey of India (GSI)
- Ministry of New and Renewable Energy estimates that India could have 10 GW of geothermal power potential.



Types of Geothermal Power Plants

There are **three types** of geothermal power plants where we can harness the heat of the earth to produce electricity.

- Dry steam powerplant
- Flash steam power plant
- Binary cycle power plant

As flash steam power plant requires a high enthalpy range and hence they cannot be used in India.

Benefits of Geothermal Energy:

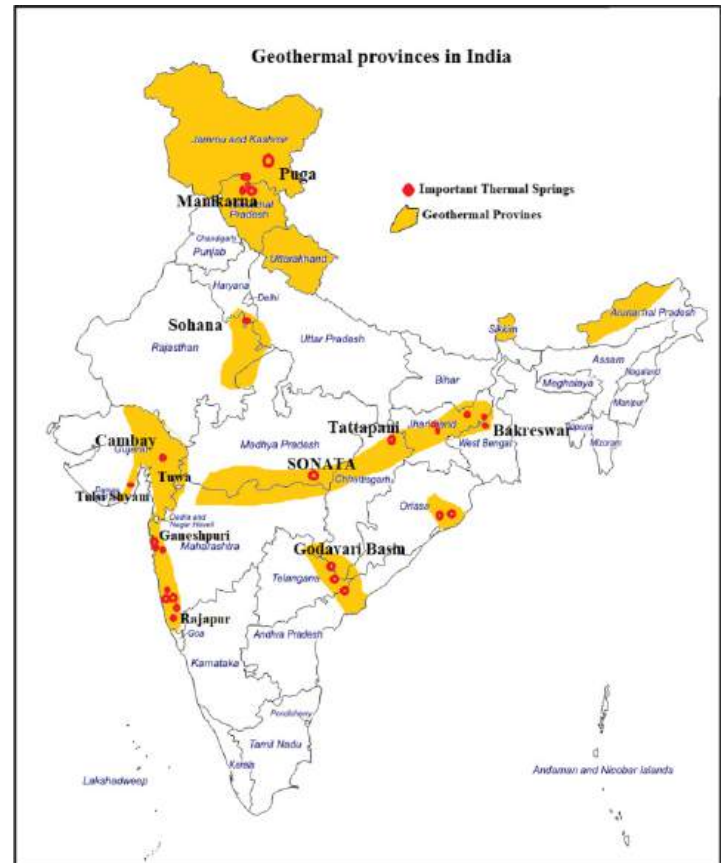
- renewable,
- provides a continuous, uninterrupted supply

Disadvantages:

- High initial capital requirement.
- Location-specific energy source, associated with other emissions like sulphur dioxide and hydrogen sulphide.
- May cause disasters – earthquakes

Status of Geothermal Energy in India

- Oil and Natural Gas Corporation (ONGC) has established India's first Geothermal field development project at **Puga village in Ladakh**.
- **Tata Power** will be setting up a geothermal plant in Gujarat of about 5MW plant.
- **National Thermal Power Corporation** is planning to construct a 300MW of geothermal power plant project in Chhattisgarh.



Insta Links: [Geothermal Energy](#)

Mains Link:

Q. Examine the various obstacles to an energy-secure India. How can the government ensure energy security while honouring its net zero commitments?

GS2

Indian Constitution

MANDATORY MINIMUM SENTENCES

Context:

A CJI-led bench has decided to examine a petition challenging mandatory minimum sentencing in the case of

gang rape of a minor below the age of 12.

About Mandatory minimum sentences:

As per the 2016 ruling in 'Mohd Hashim vs State of UP And Others'.

- The concept of mandatory minimum sentencing refers to **"a sentence which must be imposed without leaving any discretion to the court. It means a quantum of punishment that cannot be reduced below the period fixed."**

Such sentences are prescribed for **all sexual offenses under the Prevention of Children from Sexual Offences (POCSO) Act** except the offense of sexual harassment.

What are the arguments for and against?

For:

- It **limits the scope for judicial discretion and arbitrariness, thereby enhancing the cause of justice.**
- It **acts as a deterrent** for serious or harsh offenses by ensuring that the perpetrator doesn't go unpunished.

Against:

- This leads to **overcrowding of prisons and is unfair as the convict's mitigating circumstances**, such as if they are a first-time offender or the sole breadwinner in the family, are often overlooked.

Insta Links: [Death penalty](#)

Mains Links:

Q. Examine the issues in awarding a death sentence to a convict in the "rarest of rare" cases. What reforms are needed in humanising the sentencing process?
250 Words

Evolution of the concept of 'Living Will' in India:

- Law Commission of India (2006)** in its 196th Report: A patient's decision to not receive medical treatment did not constitute an attempt to commit suicide **under Section 309 IPC**. Also, a doctor who obeys the instructions of a competent patient to withhold/withdraw medical treatment **does not commit a breach of professional duty.**
- Aruna Shanbaug case (2011):** The SC **allowed passive euthanasia** for the nurse lying in a vegetative state at a hospital in Mumbai.
- K.S. Puttaswamy case/ the Right to Privacy case (2017):** - **Article 21 includes the concept of individual dignity** and thus allows passive euthanasia.
- Common Cause case (2018):** The SC decided that passive euthanasia will be legally allowed henceforth in India and also laid down guidelines for living wills.
- "We declare that an adult human being having the mental capacity to take an **informed decision** has the right to refuse medical treatment including withdrawal from life-saving devices. **The right to die with dignity is a part of the right to live with dignity.**"*

Meaning of active and passive euthanasia:

- Active euthanasia:** involves an active intervention to end a person's life with substances or external force, such as administering a lethal injection.
- Passive or negative or non-aggressive euthanasia is the **denial of medical care necessary for maintaining life**, such as the denial of antibiotics when the patient is likely to die without them.

LIVING WILL AND PASSIVE EUTHANASIA

Context:

A five-judge SC bench decided to modify the existing rules for "living wills".

Meaning of 'Living Will': Living will is a **person's right to make an advance directive** about the course of his or her treatment, including the removal of life support, if such a situation arises.

What changes after the SC's recent order?

As per 2018 guidelines	This cumbersome process will now be eased
<ul style="list-style-type: none"> • A living will was required to be signed by an individual seeking euthanasia in the presence of two witnesses. • It was to be further countersigned by a Judicial Magistrate of First Class (JMFC). • The treating physician was to constitute a board comprising three expert medical practitioners, with at least 20 years of experience. • If the board grants permission, the will had to be forwarded to the District Collector for his approval. • The Collector then forms another medical board of three expert doctors, including the Chief District Medical Officer. • Only if this second board agreed with the hospital board's findings → the decision be forwarded to the JMFC → JMFC will visit the patient and examine whether to accord approval. 	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; color: red; font-weight: bold; font-size: 1.2em;">NO CASE IN 4 YEARS</p> <p style="color: red; font-weight: bold;">➤ Rule mandating that the collector would set up review med board for passive euthanasia cases done away with. Now, both primary and review boards will be constituted by the hospital</p> <p style="color: red; font-weight: bold;">➤ Doctors in the panels need to have 5-year experience, instead of 20 years</p> </div> <ul style="list-style-type: none"> • The requirement for the Magistrate's approval has been replaced by an intimation to the Magistrate. • The medical board must communicate its decision within 48 hours (no time limit earlier). • A notary or gazetted officer can sign the living will in the presence of two witnesses instead of the Magistrate's countersign. • In case the medical boards set up by the hospital refuses permission, it will now be open to the kin to approach the High Court which will form a fresh medical team.

Different countries, different laws:

- **NETHERLANDS, LUXEMBOURG, and BELGIUM** allow both euthanasia and assisted suicide (active euthanasia) for anyone who faces "unbearable suffering" that has no chance of improvement.
- **SWITZERLAND bans euthanasia but allows assisted dying** in the presence of a doctor or physician.
- **CANADA** had announced that euthanasia and assisted dying would be allowed for mentally ill patients, however, the decision has been widely criticised.
- **The US** has different laws in different states. Euthanasia is allowed in some states like Washington, Oregon, and Montana.
- **The UK** considers it illegal and equivalent to manslaughter.

Ethical issues associated with Euthanasia:

As we've covered this topic previously, kindly follow the link to know more: [The Ethics of Euthanasia](#)

Government policies and interventions

JHARKHAND'S 1ST SURVEY OF MIGRANTS

Context:

The first Jharkhand Migrant Survey (JMS) was recently conducted across 24 districts of the state.

Background:

- The initiative is part of the state's **Safe and Responsible Migration Initiative (SRMI)**, which was launched in 2021-end and includes the preparation of a database of migrant workers.
- Apart from Jharkhand, **Kerala** too has been a **pioneer in this field**, followed by states like Tamil Nadu and Punjab.

Purpose of Conducting the Survey:

- **Evidence-based informed policy-making for targeted welfare delivery:** data from the sur-

vey will **help design appropriate state policies to address welfare issues** of migrant workers in the state

- To map the major sectors of engagement for migrant workers,
- Find the social security benefits available to their families and
- Identify the health hazards they face.
- To check last-mile service delivery and understand how **safe migration** is being facilitated

Overview of Migration:

- Migration is the **movement of people away from their usual place of residence**, across either internal (within the country) or international (across countries) borders.
- As per the 2011 Census data, India had **45.6 crore migrants in 2011** (38% of the population) compared to 31.5 crore migrants in 2001 (31% of the population).
- **99% of total migration was internal** and immigrants (international migrants) comprised 1%.

Patterns of Migration:

- **Internal migrant flows** can be classified on the basis of origin and destination.
 - i) rural-rural (largest - 54%), ii) rural-urban, iii) urban-rural and iv) urban-urban.
- Another way to classify migration is: (i) intra-state, and (ii) inter-state.
 - In 2011, intra-state movement accounted for almost 88% of all internal migration (39.6 crore persons).
 - As of 2011, UP (83 lakh residents) and Bihar were the largest source of inter-state migrants while Maharashtra (60 lakh people) and Delhi were the largest receiver states.

Reasons for internal migration and Size of the migrant labour force:

- Overall, 8% of people moved within a state for work (21% of male migrants and 2% of female migrants).
- Movement for work was **higher among inter-state migrants** - 50% of male and 5% of female interstate migrants.
- As per the Census, **there were 4.5 crore migrant**

workers in 2011, which, according to the Working Group Report on Migration, underestimates the migrant worker population.

Issues faced by migrant labour:

- **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.
- However, people migrating for work face key challenges including:
 - **Lack of social security and health benefits and poor implementation of minimum safety standards law,**
 - **Lack of portability of state-provided benefits especially food provided through the public distribution system (PDS) and**
 - **Lack of access to affordable housing and basic amenities in urban areas.**

Steps taken by the government with regard to migrant labour:

STEPS ANNOUNCED FOR WORKERS

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Migrants covered under the National Food Security Act or through any state government scheme will be provided 5 kilograms of grains and 1 kg of <i>chana</i> per family in a month ▪ A scheme under the Pradhan Mantri Awas Yojana for migrant labour or urban poor to provide ease of living at an affordable rent ▪ National portability of public distribution cards by March 2021 | <ul style="list-style-type: none"> ▪ MGNREGA work to be continued during the monsoon season as well; state governments advised to provide work to migrants through MGNREGA ▪ Labour law changes to be made by taking the legislative route ▪ A special credit facility to help 5 million street vendors with a working capital of up to ₹10,000 crore |
|---|--|

Way ahead: Four labour codes - Code on Wages 2020, Industrial Relations Code 2020, Social Security Code 2020 and Occupational Safety, Health and Working Conditions Code 2020 - needs to be notified soon.

Conclusion:

- In India, the **Concurrent List** includes the subject of labour. Therefore, it is necessary for the central and state governments to work together to develop a plan for the welfare of migrant workers

Insta Links: [Remote voting for migrant workers](#)

Issues relating to Health, Education.

SCHOOLS WITHOUT BARRIERS

Issues affecting children with disability/disabilities (CWD):

- 'State of the Education Report for India 2019: Children with Disabilities' by UNESCO mentioned that CWD comprises 1.7% of the total child population in India (Census 2011).
- **Physical:**
 - Inaccessible school buses
 - Inaccessible facilities in schools (drinking water facilities, canteens, and toilets)
 - Inappropriate infrastructure in classrooms (uncomfortable seating, slippery flooring, and low illumination)
- **Institutional:** Lack of policy implementation by agencies
- **Social:** Misinformed attitudes and perceptions among parents, teachers, staff, and communities
- **Communication barriers**
- **Economic** burden and lack of opportunities

Solutions to deal with these issues:

- Policy level:
 - Actualizing the zero-rejection policy in schools (e.g., Sarva Shiksha Abhiyan)
 - Infrastructure should include: Equitability, Usability, Durability, Affordability, Cultural adaptability, and Aesthetic appeal
- Institutional Level:
 - Awareness and sensitization programmes for children, parents, and caregivers
 - Training trainers for upskilling of school faculty and special educators
 - Technical training for local government departments
 - A co-learning platform for knowledge-sharing between all
- Civil Society and organizations:
 - UN-Habitat India: 'Leave No One Behind' Project (main pillar of Accessible India Campaign)

- ICT Solutions to Support **Universal Design for Learning**
- Storybooks in local spoken and sign languages



The ABCs of Inclusive Education

- A-** All children, regardless of ability or disability, learn together in the same age-appropriate classroom
- B-** Based on the belief that all children are valued equally and deserve access to the same opportunities
- C-** Children with disabilities, and those without, often achieve greater academic gains in inclusive classrooms

Conclusion:

Developing inclusive and accessible schools will help challenge perceptions about children with disabilities and actualise the zero-rejection policy in schools

InstaCurious: The UN SDG 4 is to “**Ensure inclusive and equitable quality education** and promote life-long learning opportunities for all.

Insta Links: [Disability Right](#)

Mains Links:

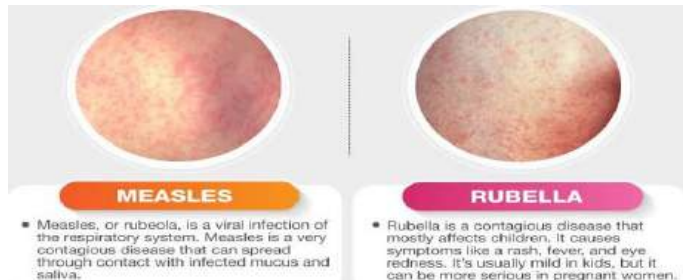
Q. Unless there is educational inclusion of the disabled, the goal of inclusiveness and empowerment will remain elusive. Comment in light of recently released the draft of the national policy for persons with disabilities. (15M)

PLAN TO ERADICATE MEASLES, RUBELLA

Context:

India set a goal (in 2019) to eradicate measles and rubella (MR) by 2023 after missing the previous deadline of 2020.

Measles and Rubella:



- **Rubella isn't the same as measles**, but the two illnesses share some signs and symptoms, such as the **red rash**.
- **Rubella is not as contagious or harmful** as measles and is brought on by a different virus.
- While measles has a **high fatality rate**, **rubella infection in a pregnant woman will have an impact on the foetus**, resulting in birth defects.
- **The measles-mumps-rubella (MMR) vaccine** is highly effective in preventing MR and provides lifelong protection against them.
- Over the past two decades, the measles vaccine is estimated to have **averted more than 30 million deaths globally**.

Why is eliminating MR crucial?

- WHO: **The measles virus** is one of the world's most contagious human viruses that kills more than 1,00,000 children every year globally and rubella is a leading cause of birth defects.
- An outbreak of measles in **Maharashtra in 2022, particularly in Mumbai**, killed 15 children among several hundred who contracted the infection.

What has India done to achieve targets?

- **During 2010-2013**, India conducted a phased measles catch-up immunisation for children aged 9 months-10 years in 14 States, vaccinating approximately 119 million children.
- **Mission Indradhanush** was launched in 2014 to vaccinate the unvaccinated.
- **During 2017-2021**, India adopted a national strategic plan for MR elimination, and introduced rubella-containing vaccine (RCV) into the routine immunisation programme, besides launching a nationwide MR supplementary immunisation activity (SIA) catch-up campaign.
 - **Additionally, it changed the focus of**

acute fever and rash surveillance from outbreak-based to case-based.

- **Also, the number of laboratories in the MR network has more than doubled.**

What needs to be done to achieve the target?

- **Immunisation at 95%** for under one- year olds.
- **District based approach -**
 - **Give each district a target to achieve the required rate of immunisation,**
 - **Conduct a robust fever and rash surveillance programme, testing for MR.**
- Progress monitoring and **additional inputs** to the districts lagging in implementation.
- **Provision of full support** (improve their service conditions, and salaries) **to the ground-level staff** (village health nurses, ASHA, Anganwadi and ICDS workers).

Conclusion:

- Having **strong immunisation infrastructure**, **States like Tamil Nadu and Kerala** will reach the targets easily, unlike the other States where more effort will be needed to do so.
- As the saying goes - **"a threat of infection anywhere is a threat everywhere,"** India needs to improve its surveillance by finding, investigating, collecting, and testing a sample for every suspected case in every district across every State and UT.

Insta Links: [Measles](#)

Prelims Links: (UPSC 2014)

Consider the following diseases

1. Diphtheria
2. Chickenpox
3. Smallpox

Which of the above diseases has/have been eradicated in India?

1. 1 and 2 only
2. 3 only
3. 1, 2 and 3
4. None

Ans: 2

India and its neighborhood- relations.

THE INDUS WATERS TREATY

Context:

New Delhi has issued a notice to Islamabad seeking modification of the Indus Waters Treaty (IWT).

Background:

- The notice follows Pakistan's continued "intransigence" in implementing the treaty, by raising repeated objections to the construction of hydel projects on the Indian side.
- India is **invoking** Article XII (3) of the treaty to bring changes to the 1960 pact.

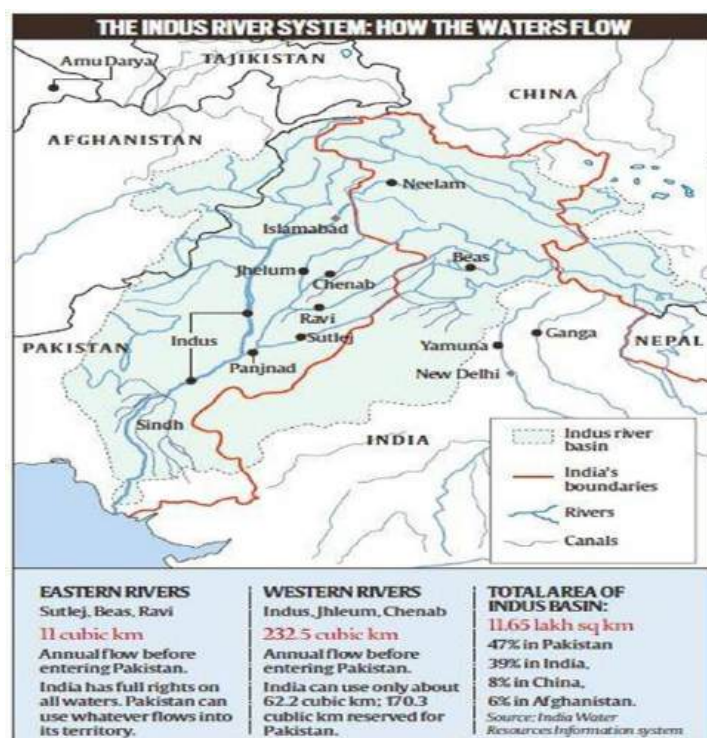
IWT and its dispute redressal mechanism:

- IWT is a **water-distribution treaty between India and Pakistan**, brokered by the World Bank (WB), to use the water available in the Indus River and its tributaries.
- It is often cited as an example of **the possibilities of peaceful coexistence** despite the troubled relationship.
- It was signed in Karachi in 1960** by then-Indian PM Jawaharlal Nehru and then-Pakistani president Ayub Khan.
- The Treaty gives control over the waters of the **three "eastern rivers" - the Beas, Ravi and Sutlej (BRS)- to India**, while control over the waters of the three **"western rivers" - the Indus, Chenab and Jhelum -has been given to Pakistan**.
- India has about 20% of the total water carried by the Indus system while Pakistan has 80%.
- The treaty **allows India to use the western river waters for limited irrigation use and unlimited non-consumptive** use for such applications as power generation.
- India has the right to generate hydroelectricity through run-of-the-river (RoR) projects on the western rivers** which, subject to specific criteria for design and operation, is unrestricted.
- The dispute redressal mechanism provided under the IWT is a **graded 3-level mechanism**.
- The concerns have to be cleared at the levels of the **Indus Commissioners → Neutral Expert →**

Court of Arbitration.

Dispute over the hydel projects:

- There has been a **longstanding dispute over two hydroelectric power projects** - one on the Kishanganga river (a tributary of Jhelum) and the other on the Chenab (Ratle).
- Pakistan has raised objections to these projects, and **dispute resolution mechanisms under the Treaty have been invoked multiple times**. But a resolution has not been reached.
- In 2022, the WB announced to concurrently appoint a **Neutral Expert and a Chair of the Court of Arbitration** to resolve the dispute, which as per India poses practical and legal challenges.
 - Pakistan had demanded the **constitution of a Court of Arbitration**, while India demanded a **Neutral Expert to resolve the dispute**.



Recent developments:

- India has not fully utilised its rights over the waters of the Indus system.
- Over the last few years, there has been a growing demand in India **to use the IWT as a strategic tool**, considering that India has a **natural advantage being the upper riparian state**. In the aftermath of the Uri attack, Prime Minister Narendra Modi had said, **'blood & water can't flow together at the same time.'**

- Accordingly, India has been working to start several big and small hydroelectric projects that had either been stalled or were in the planning stages.

The treaty has remained “uninterrupted” because India respects its signatory and **values transboundary rivers as an important connector in the region in terms of both diplomacy and economic prosperity.**

India-Pakistan relations:

The current state:

- Prior to 2016:** Characterised by intense engagement, terror attacks, Indian responses, a breakdown of talks and eventual resumption of talks.
- Post-2016:** The Pathankot airbase attack followed by a terror attack in Uri, prompted India to respond via ‘**Surgical Strikes**’ and practical ‘Freezing of Relations’.
- Pulwama Terror Attack (2019):** India retaliated through the **Balakot airstrike**.
- Abrogation of Article 370:** further deepened the divide.
- Age of **Cold peace**: on the Line of Control, inside Kashmir and in the verbal exchanges between the two sides.
 - A state of relative peace between two countries characterised by mistrust and hostile internal policies between the two governments and citizens is referred to as **cold peace**.
- Indications of improved relations:** thanks to **cricket diplomacy**, India may visit Pakistan in 2023 following a 15-year gap.
- Pakistan’s PM wish to offer a white flag to India** in a recent interview for the betterment of the Pakistani economy and its people.
- India’s invitation to Pak PM** after 12 years to attend a high-level SCO meet being hosted by India at Goa.

Key challenges ahead for India-Pak relations:

- The China-Pakistan axis in Asian geopolitics:** Pakistan and Chinese leaders describe their ties using metaphors such as “**higher than the mountains**” and “**deeper than the oceans**”. Pakistan’s economic dependence on Beijing has increased in recent years. **Due to Pakistan’s current economic crisis** as a result of declining foreign exchange reserves and mounting debt, India may face growing Chinese influence in South Asia as a whole and Pakistan in particular (CPEC).
- Terror atmosphere: brooded by Pakistan is hampering India’s efforts to peace.

Conclusion:

Multilateral settings are often viewed as opportunities for countries with problematic relations to find a way forward. India should utilise this opportunity to iron out differences with Pakistan.

Insta Links: [Indo-Pakistan relations](#)

Bilateral Relations

Mains Links:

Q. “Increasing cross-border terrorist attacks in India and growing interference in the internal affairs of member-states by Pakistan are not conducive for the future of SAARC (South Asian Association for Regional Cooperation).” Explain with suitable examples. (UPSC 2016)

INDIA’S TIES WITH EGYPT

Context:

This is the **first time** that an Egyptian President (Abdel Fattah El-Sisi) has been invited as chief guest for the Republic Day celebrations in India.

India-Egypt relations:

History:

- India and Egypt share close political understanding based on a long history of cooperation in **bilateral, regional and global issues**.
- Diplomatic relations were established in **1947** (completed 75 years in 2022).
- **Friendship Treaty** between the two countries led to the formation of **Non-Aligned Movement** (NAM in 1961) along with Yugoslav President Josip Broz Tito.
- High-level exchanges with Egypt continued post **2011 Egyptian Revolution**
- The new government led by President (Sisi) took over in 2014.
- When the Egyptian President paid a State visit to India in 2016, a joint statement was issued, **outlining the three pillars-**
 - Political-security cooperation,
 - Economic engagement and scientific collaboration and
 - Cultural and people-people ties as the basis of a new partnership for a new era.

The recent engagements:

- India has invited Egypt as a **special guest for the G-20 summit**.
- **Exercise Cyclone-I** – first ever exercise between Indian Army and Egyptian Army was held in

Jaisalmer recently.

- India and Egypt agreed to elevate their bilateral ties to a **“Strategic Partnership”** covering political, security, defence, energy, and economic aspects.

What’s the state of bilateral trade relations?

- Egypt has traditionally been **one of India’s most important trading partners** in Africa, as they have had a bilateral trade agreement since 1978 based on the **most-favoured nation clause**.
- The bilateral trade has **increased more than five times** (USD 7.26 billion in 2021-22 - a 75% increase from FY 2020-2021) in the past 10 years.

Other areas of cooperation:

- **Agriculture:** Egypt is currently facing a shortage of food grains as its major sources were the **warring Ukraine and Russia**. In May last year, India- which had put a ban on the sale of wheat, allowed the export of 61,000 tonnes of wheat to Egypt.
- Cyber security & IT
- Healthcare
- Culture
- Youth matters and Broadcasting

Importance of the Egyptian President’s present visit:

For Egypt	For India
<ul style="list-style-type: none"> ● Egypt is facing a massive economic crisis due to depleted forex reserves. ● Egypt is eyeing more tourist footfall from India to boost forex inflows into their tourism-dependent economy. 	<ul style="list-style-type: none"> ● India is looking at increasing investments in the country, especially in major infrastructure projects in and around the Suez Canal, and special economic zones in Alexandria and Cairo.
<ul style="list-style-type: none"> ● Egypt is interested in procuring defence equipment from India. ● A military contingent from the Egyptian Army will participate in the Republic Day parade. 	<ul style="list-style-type: none"> ● India is planning to supply LCA Tejas, missiles like Akash, DRDO’s Smart Anti-Airfield Weapon and radars.
<ul style="list-style-type: none"> ● Education sector: the Indian higher educational institutions are planning to set up campuses in Egypt 	<ul style="list-style-type: none"> ● A proposal for establishing an IIT in Egypt is in the works
<ul style="list-style-type: none"> ● Egypt is viewed as a moderate Islamic voice by New Delhi since it has made an attempt over the years to play a nuanced and positive role in the 57-member Organisation of Islamic Cooperation. 	<ul style="list-style-type: none"> ● Improving ties with Muslim-majority countries

Related Topic: Republic Day 2023 - How India chooses its chief guest

Context:

- Being invited as the chief guest at Republic Day celebrations is the **highest honour a country accords in terms of protocol and the ultimate sign of friendship.**

How is the Republic Day chief guest chosen?

- The process starts nearly six months in advance of the event and all kinds of considerations (political, commercial, military, and economic interests of India) are taken into account by the **Ministry of External Affairs (MEA)** before extending the invitation.
- Another factor for choosing Egypt: the association with the **NAM** which began in the late 1950s, early 1960s.
- The first Chief Guest** of the parade in 1950 was President Sukarno of Indonesia, one of the five founding members of the NAM.
- After due consideration, the MEA seeks the approval of the Prime Minister and the President on the matter.
- The MEA does not choose one option but a list of potential candidates and **discretion is of utmost importance.**
- After a candidate is finalised, the **Chief of Protocol** (Protocol Division, MEA) works on the details of the programme and logistics.

What is the significance of a Republic Day invite? Highly symbolic from the Indian government's perspective as the choice is dictated by a number of reasons - strategic and diplomatic, business interests, and international geo-politics.

InstaCurious: The first ever IAF-EAF Joint Tactical Air Exercise, **Dessert Warrior**, was held in Egypt in 2021.

Insta Links: [Crafting a unique partnership with Africa](#)

Mains Links: Q. "If the last few decades were Asia's growth story, the next few are expected to be Africa's." In the light of this statement, examine India's influence in Africa in recent years. (UPSC 2021)

Prelims Links: (UPSC 2022)

Q. Which one of the lakes of West Africa has become dry and turned into a desert?

- Lake Victoria
- Lake Faguibine
- Lake Oguta
- Lake Volta

Ans: 2

GS3

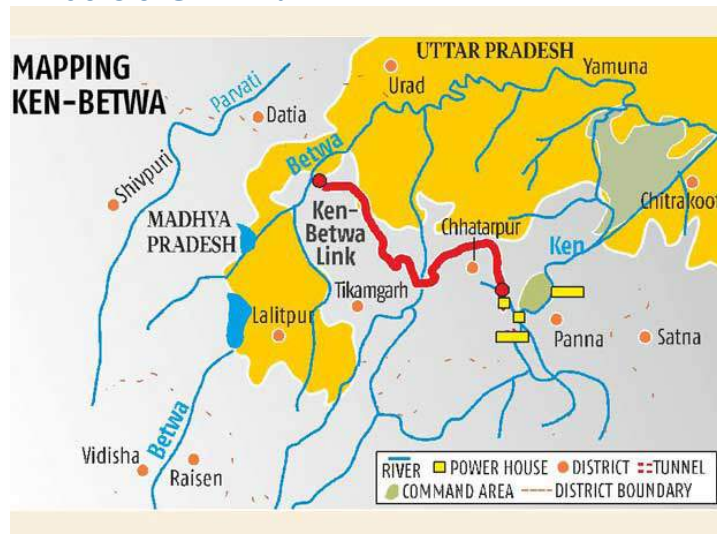
Economy and issues relating to development.

KEN-BETWA RIVER LINK PROJECT

Context:

The Steering Committee of the Ken-Betwa Link Project (KBLP), chaired by the Secretary of the Department of Water Resources, Ministry of Jal Shakti, held its third meeting recently.

What is the KBLP?



- It is a "flagship" project that is critical for the **water security and socio-economic development of the Bundelkhand region** (of MP and UP).
- The link will be in the form of a **canal** that will be

fed by the **new Daudhan Dam on the Ken**, to be built **within Panna Tiger Reserve**.

- The dam will generate **103 MW of hydroelectric power** and is expected to **irrigate 6.3 lakh hectares** of land every year.

Concerns:

- **Hydrological and ecological concerns:** The 'surplus and deficit' model has little basis in science (as these could be seasonal phenomena too) and it may **endanger the water security of the Panna district** (Ken - a non-perennial river).
 - The project has not yet received a complete forest clearance.
 - The NGT is currently hearing a challenge to the project's environmental approval.

The legal problems:

- Approval by the National Board for Wildlife violates Section 35(6) of the **Wildlife (Protection) Act 1972** - improvement and better management of wildlife.
- According to the SC, the creation of a high reservoir dam on the Ken River in the Panna National Park and Tiger Reserve for the KBLP is ultra vires to the WPA 1972.
- The destructive impact of the proposed dam on the flow of water into and outside of the **Ken Gharial Sanctuary** (downstream of the Panna national park) is evident.

Impact on Panna's tigers and other wildlife:

- The deep gorges of Panna will be drowned if the new dam is built.
- **By 2009**, there were no tigers in the Panna Tiger Reserve, **necessitating an incredible effort** that lasted almost a decade to reintroduce them.
- The key wildlife species that will be affected include **endangered vultures, mahseer fish, and the critically endangered Gangetic gharial** (*Gavialis gangeticus*) in the Ken Gharial Sanctuary.

Way ahead:

- The government is developing a larger '**Panna Tiger Landscape**'.
- An "**independent**" hydrological investigation of

the Ken.

- **Restoring Bundelkhand's erstwhile Chandel-period lakes and ponds.**
- The developmental project should not destroy the ecology of fragile ecosystems and important tiger habitats in the country.
- The approach should be **eco-centric and not anthropocentric**.

Conclusion:

Due diligence and expert scrutiny during the project-approval stage are cornerstones of sound environmental governance.

Insta Links: [Ken-Betwa link project](#)

Mains Links:

Q. Not many years ago, river linking was a concept but it is becoming a reality in the country. Discuss the advantages of river linking and its possible impact on the environment. (UPSC 2017)

FIGHTING THE BIG G

Context:

Google began to change the **business model used in India** to push its Android operating system (OS) and the Google Play Store.

- The change was triggered by the **Supreme Court setting January 26** as the deadline for Google to comply with the Competition Commission of India's rulings.

The Changes made by Google:

- In the new model, **instead of creating a bouquet of apps**, smartphone makers can license individual apps from Google.
- Google's search engine **will not necessarily** be the default setting.

What is the 'walled garden approach' adopted by Google:

Android's dominance (under-walled garden approach) is based on a complex model of cross-subsidies. Google offers free services such as a search engine and email, thereby making a huge user base. This user base is then monetised for **advertising revenue. Even third-par-**

ty apps cannot all wish away Google. Google controls both sides of this advertising ecosystem- the users as well as third-party app developers, making it a walled garden.

Initiatives taken to break Google's monopoly:

- **South Korea:** It imposed curbs on the **proprietary billing system** of Google and Apple.
- **EU's upcoming Digital Markets Act:** It will prevent "**gatekeepers**" from engaging in anti-competitive behaviour. It will no longer be business as usual for the **Android OS ecosystem**

Previously, the **Competition Commission of India (CCI)** had imposed a penalty on Alphabet-owned Google for "**abusing its dominant position**" in markets related to the Android mobile device ecosystem.

- The CCI stated that **Google contravened competition law** due to mandatory pre-installation of the entire **Google Mobile Suite (GMS)** and there was no option to uninstall the same.

What are anti-trust laws?

Antitrust laws are regulations that encourage competition by **limiting the market power of any particular firm**. Essentially, these laws prohibit business practices that unreasonably deprive consumers of the benefits of competition, resulting in higher prices for products and services. In India, The Competition Act, 2002 regulates such activities.

About CCI

The Competition Commission of India (CCI, constituted in **2009**) is a **statutory body** of the Government of India responsible for enforcing the Competition Act, 2002. The **Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act)** was repealed and replaced by the **Competition Act, 2002**, on the recommendations of the **Raghavan committee**.

- It consists of **one Chairperson and six Members** who shall be appointed by the Central Government.
- **The Competition Act, 2002 (amended in 2007) prohibits anti-competitive agreements**, and abuse of dominant position by enterprises and regulates combinations (acquisition, acquiring of control and M&A), which cause or are likely to cause an appreciable adverse effect on competition within India.

Insta Links: [Apple faces antitrust case in India over apps issue](#)

Prelims link

1. What is an anti-trust case?
2. CCI- roles, responsibilities and functions
3. Important anti-trust-related cases
4. Competition Commission Act

Mains link:

Q. Ensuring fair competition in the Indian digital market is in the best interest of every stakeholder involved. Comment. (10M)

Inclusive growth and issues.

OXFAM INEQUALITY REPORT ON WEALTH TAX

Context:

- Evidence of "excessive" wealth concentration and uneven income growth is mentioned in the recently released Oxfam "**Survival of the Richest**" report.
- **The gap in income recovery** between the top income categories and those at the bottom as a result of the economic crisis post-COVID-19 pandemic.

India-specific findings in the report:

- There are now 166 billionaires, up from **106** in 2020.
- **The top (30%) earners hold the majority (90%) of the wealth.**

Ramifications of the above findings:

- This can stir the debate for an **equalising wealth tax** (a progressive wealth tax where the tax rate increases as the wealth of an individual increase. The goal is to redistribute wealth and reduce inequality among citizens.)
- Oxfam argues that indirect taxes are regressive and suggests -
 - **A wealth tax - a tax on unrealised capital gains and higher taxes on corporates.**
 - **Tax on incomes, capital gains and wealth are interrelated and the changes cannot be recommended in isolation.**

Tax collection depends upon The mix of taxes that a country raises as a function of its institutional capacity, the structure of the tax base and the desire for simplification.

Case of India - The report raises two important points:

- **The lower corporate tax rate** in lieu of incentives and the introduction of GST - a costly experiment of tax policy in India.
 - **The corporate tax cuts brought the statutory tax rate down from 30 to 25.17%, leading to a revenue loss of Rs 1.03 lakh crore.**
- The GST and its disproportionate impact on the lowest earners.
 - **The bottom 50% pays six times more indirect tax as compared to the top 10%.**
 - **The current income tax system exempts incomes up to Rs 5 lakh from tax and the GST rate structure places a higher burden on luxuries.**

Issues with the Oxfam report's calculation:

- Although the report carries the right message about **rising inequalities and the need for tax reform**, it gets lost in assumptions.
 - **For example, India will gain 10% more in taxes than it currently collects indirect taxes from the introduction of the wealth tax.**
- Wealth tax has historically been utilised by nations, including India, **but the revenues were dismal**, making it an expensive tax to operate.
- Hence, **a compartmentalised approach to tax policy** that links several taxes that are levied against the same base is meaningless.

Way ahead:

Taxes do not always solve problems, and **it is important to consider the impact of other macroeconomic measures** like low-interest rates and regulatory actions.

Conclusion:

Rather than depending on a tax that depends heavily on volatile asset values, the same goal can be achieved with a gradual increase in wealth and income of all. This will **reduce inequalities without penalising the corporates**.

InstaCurious: The **Gini index** measures the extent to which the distribution of income among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality. For India, it was **35.7 in 2019** (World Bank Data)

Insta Links: [Inequality in India](#)

Mains Links:

Q. "Investment in infrastructure is essential for more rapid and inclusive economic growth." Discuss in light of India's experience. (UPSC 2021)

CAMPAIGN FOR INCLUSIVE CIRCULAR ECONOMY

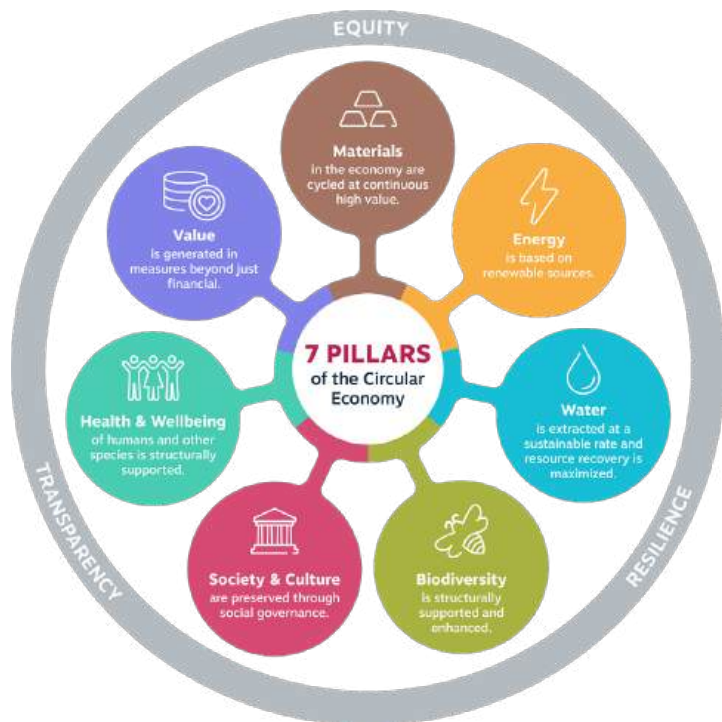
Context:

The United Nations Development Programme (UNDP) launched a campaign to drive an **inclusive circular economy** as part of its initiative to promote sustainability.

Key features of the campaign:

- The project is a scale-up of existing partnership under **UNDP's flagship Plastic Waste Management Programme**.
- **End-to-end management of plastic waste** by promoting:
 - **Segregation of waste at the source**
 - **Collection of the segregated waste**
 - **Setting up Material Recovery Facilities (MRFs) for recycling all kinds of plastic waste.**
- **Partnership with the Private sector** will also help build the capacities of Urban Local Bodies for adopting the MRFs or Swachhta Kendra.
- **Collaboration between municipal corporations, corporates, Safai Saathis, and people.**
- **Reach out to 100,000 households for segregation at the source**

7 Pillars of Circular economy:



- deregistered from June 1, 2024, if they fail the fitness test or their registration certificate is not renewed.
- **Niti Aayog** along with the EU has prepared a strategy paper on '**Resource Efficiency**'
- Battery Waste Management Rules 2022
- Plastic Waste Management (Amendment) Rules 2022
- e-Waste Management Rules 2022
- **Extended Producer Responsibility (EPR)** certificates

Inst Curious:

The Kabadiwala (a startup) was founded in 2014 and offered free doorstep scrap collection services to households, retailers, and industries in Bhopal.

[Insta Links: Clean energy should use the battery of a circular economy](#)

Mains Links:

Q. Explain the concept of the circular economy. Giving examples, discuss its utility in India. (250 Words)

Government Budgeting.

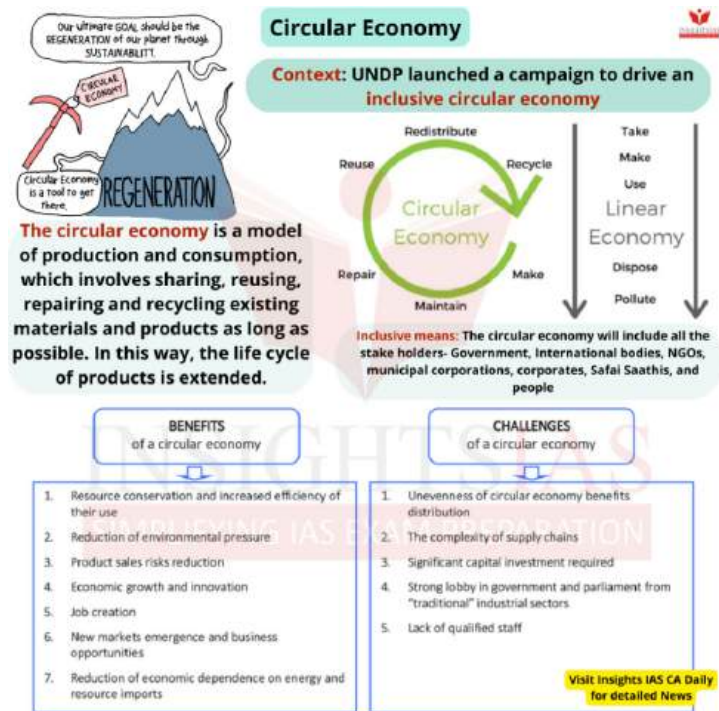
THE NUTS AND BOLTS OF A UNION BUDGET

Context:

On February 1, **Finance Minister Nirmala Sitharaman** will present the Union Budget for the **next financial year (2023-24)**. Here are the basics of Union Budget.

Constitutional Provisions

- **Article 112 of Indian Constitution:** The Union Budget for a year is referred to as the **Annual Financial Statement (AFS)**.
- It is a statement of the **estimated receipts and expenditures of the Government in a Financial Year**.
- The Budget Division of the **Department of Economic Affairs** in the Ministry of Finance is the nodal body responsible for preparing the Budget.



Initiatives towards Circular Economy:

- **Global:**
 - Germany and Japan have made the '**Circular Economy**' part of their economic planning
 - China's **Circular Economy Promotion Law**
- **India:**
 - **Recognition of the circular economy concept in the 2022-23 Budget**
 - **Vehicle Scrappage Policy 2022:** Private vehicles older than 20 years will be

Any budget essentially provides some details.

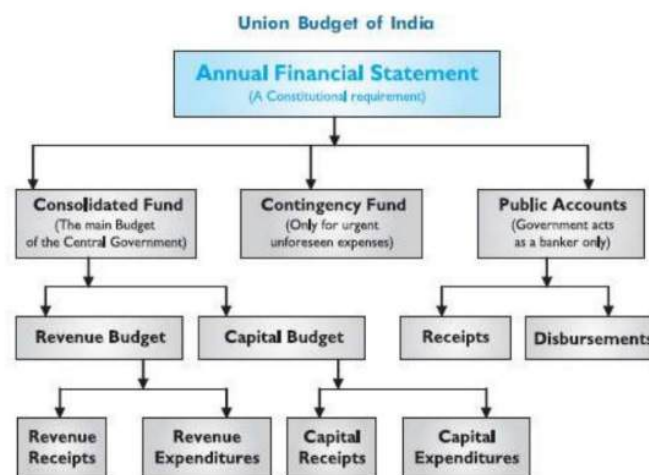
- **The total receipts, Ways and means to raise the revenue** :The total amount of money that the government will raise in the coming year.
- **Total expenditure**: The total amount of money it will spend.
- **Fiscal deficit**: The total amount of money it will borrow from the market to plug the gap between what it spends and what it earns.
- Details of the actual receipts and expenditure of the closing financial year and the reasons for **any deficit or surplus in that year**, and
- The economic and financial policy of the coming year, i.e., **taxation proposals, prospects of revenue, spending programme and introduction of new schemes/projects.**

Forces that shape a Budget

- Demand for a **lower rate of taxation and/or a higher rate of exemptions**. In other words, **people and firms lobby to get their tax burden reduced.**
- Demands from **people/firms wanting higher or newer subsidies.**
- Demands which are antagonistic to the first two categories. They demand that the government **cuts down on its fiscal deficit (essentially the total amount of money the government borrows from the market in order to bridge the gap between its total expenditure and its total receipts).**

In Parliament, the Budget goes through six stages:

- Presentation of Budget.
- General discussion.
- Scrutiny by Departmental Committees.
- Voting on Demands for Grants.
- Passing an Appropriation Bill.
- Passing of Finance Bill.



Insta Curious:

- **RK Shanmukham Chetty presented the 1st Union Budget of independent India** on Nov 26, 1947.
- Till 2017 Rail Budget and Union Budget came separately (Done through **Acworth Committee – 1924**) but **now both are merged together.**
- **Jawaharlal Nehru, Indira Gandhi and Rajiv Gandhi are the only prime ministers** to have presented a Budget.
- The date of the Union Budget presentation was **changed in 2017 by then finance minister Arun Jaitley** from 'last working day of February' to 'February 1'.
- On 1st Feb 2021, Finance Minister **Nirmala Sitharaman presented the first paperless budget.** This was done due to the ongoing COVID- 19 pandemic in India.

Insta Links: [The budgeting process in India](#)

Prelims Link: [UPSC 2016](#)

Q. Which of the following is/are included in the capital budget of the Government of India?

1. Expenditure on acquisition of assets like roads, buildings, machinery, etc,
2. Loans received from foreign governments
3. Loans and advances granted to the States and Union Territories

Select the correct answer using the code given below.

- (a) 1 only
(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Solution: D

Mains Link:

Q. Distinguish between Capital Budget and Revenue Budget. Explain the components of both these Budgets. (UPSC 2021)

Infrastructure: Energy.

RISK OF TRANSITION TOWARDS CLEAN ENERGY

Context:

A study in the **Global Environmental Change journal**, India's financial sector is highly exposed to the risks of the economy transitioning from being largely dependent on fossil fuels to clean energy.

Background:

- **Coal** - accounts for **44% of India's primary energy** sources and **70% of power generation**.
- The coal-fired power plants have an **average age of 13 years** and India has 91,000 MW of new proposed coal capacity in the works, second only to China.
- According to **the Draft National Electricity Plan 2022**, coal's share in the electricity generation mix will decrease to 50% by 2030.
- India's **"Panchamrit" target** to reach **net-zero emissions by 2070** and to source half of its electricity needs from non-fossil fuel sources by 2030.

Highlights of the study:

- **The financial decisions** of Indian banks and institutional investors are forcing the nation to rely on a more expensive, more polluting source of energy. **For example,**
 - **Oil and gas extraction** accounted for **60% of lending** to the mining industry, while petroleum refining accounted for one-fifth of debt in the manufacturing industry.
 - **Only 17.5% of bank lending** to the power sector has been to renewables.
- Consequently, **India has much higher electrici-**

ty from carbon sources than the world average, despite its vast potential for cheap solar, wind, and small hydropower.

Challenges:

- **High-carbon industries** account for 10% of outstanding debt to Indian financial institutions.
 - **However, these industries are also heavily indebted and therefore have the less financial capacity to respond to shocks and stresses.**
- **India's financial sector** is heavily exposed to potential transition risks.
- **A shortage of expertise** in providing apt advice to the institutions on such a transition.
- **Trillion dollars needed** to meet power generation commitments from non-fossil fuel sources.

Reasons why economy could be at risk:

- **High upfront costs:** The initial investment required to transition to clean energy, such as building solar or wind power plants.
- **Job losses in certain industries** could have negative effects on the economy leading to higher unemployment.
- **Dependence on foreign technology** would rise the import bill, making it unaffordable.
- **Lack of infrastructure** developing which may be costly and time-consuming.
- **Uncertainty of investments and regulations** can make it difficult for companies.

Way ahead:

- **Financiers, regulators and policymakers** need to ensure an orderly transition to net zero.
- RBI is expected to launch India's **first-ever sovereign green bonds auction** worth ₹40 billion.
- **India's presidency of the G-20** focuses on the energy transition and sustainable finance.
- **Systematically incorporate data into financial planning**, with respect to ESG

Conclusion:

There is a linkage between financial risk, renewable energy technology budgets, and environmental quality as the transition to clean energy can have an impact on all three areas.

Shifting financial resources towards renewables would deliver huge benefits for India like cheaper electricity, cleaner air, and fewer emissions. Thus, on the other side of risk is a **tremendous opportunity**.

InstaCurious:

ESG stands for Environmental, Social, and Governance. It refers to a set of standards for a company's operations that socially conscious investors use to screen potential investments.

Environmental standards - company's impact on the natural world.

Social standards - company's impact on its employees, customers, and community.

Governance standards - company's leadership, financial transparency, and ethical behaviour.

Related News:

What is Liquefied Natural Gas (LNG), and how it impacts the climate

Read related Link: [Europe turns to LNG instead of Russian gas: What is it, how it impacts the climate](#)

Insta Links: [India Ranks Third in Renewable Energy Installations in 2021](#)

Mains Links: Q. Describe the benefits of deriving electric energy from sunlight in contrast to conventional energy generation. What are the initiatives offered by our government for this purpose? (UPSC 2020)

Prelims Links:

Q. With reference to the Indian Renewable Energy Development Agency Limited (IREDA), which of the following statements is/are correct? (UPSC CSE 2015)

1. It is a Public Limited Government Company.
2. It is a Non-Banking Financial Company.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: C

Science and Technology- Health

TRAVAILS OF TRANS-FAT

Context:

Five billion people globally are exposed to harmful **trans-fat**, increasing their heart disease and death risk, according to a **new report "Countdown to 2023" by the World Health Organization (WHO)**.

- The report monitors global progress **towards the 2023 target for the global elimination of industrially produced Trans-Fatty Acids (TFA)**.

About TFA:

- TFAs are **unsaturated fatty acids** that are of two types -
 - **Naturally occurring trans-fat occurs in some dairy and meat products.**
 - **Industrially produced trans-fat adds hydrogen to liquid vegetable oils to make them more solid. It is found in packaged foods, baked goods, cooking oils and spreads.**

Key Findings from the report:

- Trans fat intake is **accountable for up to 500,000 early deaths from coronary heart disease annually.**
- **Nine countries — Australia, Azerbaijan, Bhutan, Ecuador, Egypt, Iran, Nepal, Pakistan and the Republic of Korea — of the 16 nations with the highest estimated percentage of coronary heart disease fatalities attributed to trans-fat consumption do not currently have best-practices strategy.**
- **Two best-practices policy options:**
 - **Mandatory national limit of two grams of industrially produced trans-fat per 100 grams of total fat in all foods.**
 - **Mandatory national ban on the production or use of partially hydrogenated oils as an ingredient in all foods.**

Harmful effects of TFA:

- TFAs pose a **higher risk of heart disease than saturated fats** - they raise total cholesterol levels, and **reduce the good cholesterol (HDL), which helps to protect one against heart dis-**

ease.

- It is also associated with a higher risk of **developing obesity, type 2 diabetes, metabolic syndrome, insulin resistance, infertility, and certain types of cancers** and can also lead to compromised fetal development causing harm to the foetus.

Steps taken to regulate TFA:

National:

- FSSAI launched a “**Trans Fat-Free**” logo for **voluntary labelling** to promote TFA-free products in shops for preparations containing TFA not exceeding 0.2 per 100 g/ml.
- Campaign “**Heart Attack Rewind**” to eliminate industrially-produced trans-fat in the food supply by the year 2022.
- FSSAI limits the content to **not more than 2% by mass of total oils and fats from January 2022**.
- Swasth Bharat Yatra, an initiative started under the “Eat Right” campaign** is a Pan-India cyclothon to engage citizens on issues of food safety, combating food adulteration and healthy diets.

Global:

- TFA **REPLACE** strategy by WHO.

REPLACE					
REVIEW	PROMOTE	LEGISLATE	ASSESS	CREATE	ENFORCE
dietary sources of industrially-produced trans fats and the landscape for required policy change.	the replacement of industrially-produced trans fats with healthier fats and oils	or enact regulatory actions to eliminate industrially-produced trans fats	and monitor trans fat content in the food supply and changes in trans fat consumption in the population	awareness of the negative health impact of TFA among policy-makers, producers, suppliers, and the public	compliance with policies and regulations

Insta Links: [Trans fatty acids \(TFA\)](#)

Mains Link:

Q. What are Trans Fats? Discuss their impact on health and, measures taken by the government to decrease the consumption of trans fats. (250 words)

Environmental Conservation

UNDERSTANDING KERALA'S MAN-ELEPHANT CONFLICT

Context:

The larger issue of man-animal conflict needs to be discussed as calls for the capture of an elephant that reacted to overexcited tourists in Munnar, Kerala, grow louder.

Man-Animal Conflict:

- Meaning:** *Struggles that emerge when the presence or behaviour of wildlife poses an actual or perceived, direct and recurring threat to human interests or needs, leading to disagreements between groups of people and negative impacts on people and/or wildlife.*

Reasons for the conflict:

- Growing human/animal populations** overlap with established wildlife/human territory, **creating a reduction of resources.**
- Fragmentation of habitats and corridors** due to legal and illegal changes in land use - clearances for mining or encroachment for agriculture.
- Agricultural Expansion** and Changing cropping patterns that attract wild animals to farmlands.
- Habitat degradation** due to the growth of invasive alien species, etc.
- Other Reasons: Infrastructure development, Climate Change, etc.

Suggestions:

- A Future for All Report 2021 (WWF and UNEP) suggests an approach of coexistence between humans and wildlife and the involvement of local communities.
- Periodic awareness campaigns: To sensitize, guide and advise the general public on man-animal conflict, including dissemination of information through various forms of media.
- Skill-development programs: For people living in and around the forest.
- National Wildlife Action Plan 2017-31: It has underscored the need for a landscape-level approach, the acceptance of rights of use and entry (into forests), and an emphasis on people's participation in conservation, promoting coexistence between wildlife and local communities through awareness and education programs, and identifying and declaring critical wildlife habitats and migration corridors and taking measures to protect them from human encroachment.

- A landscape-based approach is a method of conservation and management that focuses on preserving and managing entire ecosystems, rather than individual species or habitats. It takes into account the interconnectedness of different habitats, species, and ecosystem services within a given landscape.
- A landscape-based approach aims to:
 1. Maintain the ecological integrity and functional diversity of the landscape
 2. Promote the conservation of biodiversity, including endangered species and habitats
 3. Support the sustainable use of natural resources by local communities
 4. Address the root causes of conservation problems, such as habitat loss, fragmentation, and degradation.

The case of Kerala - A success story in managing man-animal conflict:

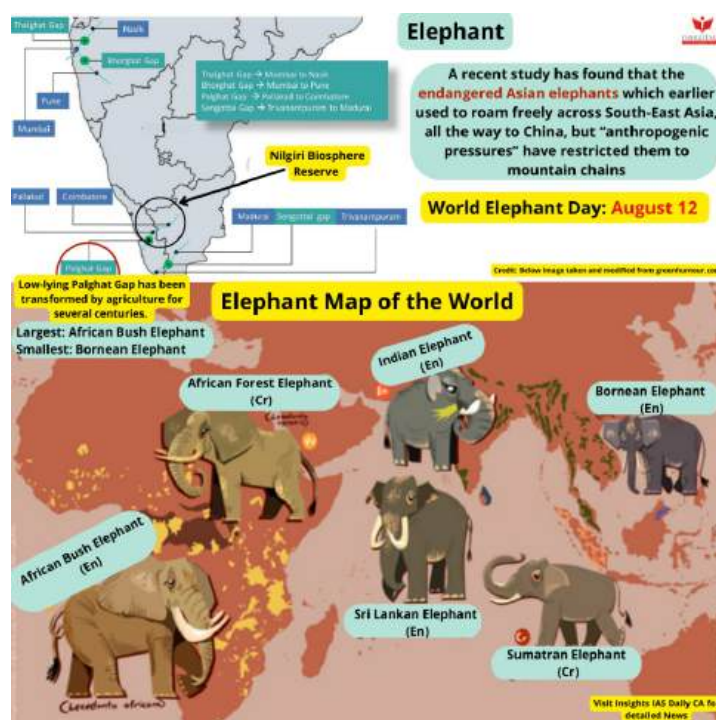
- The magnitude of human-elephant conflict in Kerala is **relatively low when compared with its abundance of wild elephants**.
- Of the estimated nationwide population of **30,000 wild elephants in 2017**, Kerala had about 5,700 (19%). Between 2018-2021, elephants killed 2,036 people in India and Kerala accounted for only 81 (4%) of these deaths.
- **Elephants are far-ranging animals.**
 - But in Kerala,
 - **The frontiers between the wilderness and civilisation have remained largely unaltered in recent years.**
 - **Changes in agricultural practices in cropland. For example, coffee, pepper or tea plantations, in which jumbos have little interest.**

Conclusion:

Proactive perception management, stricter enforcement by the states and a pragmatic policy for the problem will reduce the incidents of man-animal conflict. Healthy ecosystems and the vital services they provide to people depend on wildlife. Managing human-wildlife conflicts is therefore crucial to achieve the **UN Vision for Biodiversity 2050** in which 'humanity lives in harmony with nature and in which wildlife and other living species are protected'.

InstaCurious:

Uttar Pradesh has declared man-animal conflict death as a state disaster.



Insta Links: Man-Animal conflict

FOREST COVER IMPROVEMENT: A TARGET MISSED

Context:

According to data accessed via the RTI, India is lagging behind in the targets to increase the number and quality of tree and forest-cover plantations set in the **Green India Mission (GIM)**.

Background:

- As per the **India State of Forest Report-2021**, forest and tree cover in the country increased by **2,261 square kilometres** since the last assessment in 2019.
- India's total forest and tree cover was **80.9 million hectares**, which accounted for **24.62%** of the geographical area of the country.
- According to India's National Forest Policy (1988), **at least 33%** of the country's total land area should be covered by forests in order to ensure ecological stability.

- India is tenth in the world in terms of the total area covered by forests, **but only 120th in terms of the proportion** of that area covered by forests.
- **17 States and Union Territories** had more than 33% of their area under forest cover.
- The top five States in terms of forest cover as a percentage of their total geographical area were **Mizoram** (84.53%), Arunachal Pradesh (79.33%), Meghalaya (76%), etc.
- **MP had the largest forest cover**, followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra.

National Mission for a Green India/ GIM:

- It is **one of the eight Missions** under the National Action Plan on Climate Change (NAPCC) launched in **2014** for a 10 years period with an outlay of Rs 60,000 crore.
- It aims at **protecting, restoring and enhancing** India's forest cover and responding to climate change.
- **The target under the Mission is -**
 - **Increasing the forest and tree cover by 5 million hectares (ha) in 10 years.**
 - **Increasing the quality of the existing forest and tree cover in another 5 million ha of forest in non-forest lands in 10 years.**
 - **Increasing forest-based livelihood income for about 3 million households in and around these forest areas.**
- It is implemented under the overall administrative control of the **MoEF&CC** and presents a **holistic approach** to greening that considers -
 - **Carbon sequestration goals**
 - **Maintain diverse ecosystem services and provisioning services.**
- **Integrated cross-sectoral approach:** Implemented on both public and private lands, with local communities playing a crucial part in planning, decision-making, implementation, and monitoring.

Targets under the GIM:

From 2015-16 to 2021-22, the Centre had approved a target of increasing tree/forest cover by 53,377 hectares and improving the quality of the degraded forest by 1,66,656 ha.

What are the challenges?

- **The GIM is able to achieve only 2.8% of its plantation target.** For example, tree/forest cover had increased by 26,287 hectares and forest quality improved by only 1,02,096 hectares as of December 31, 2022.
- **The GIM is grossly underfunded and funds allocated remain underutilised:** the Centre had allocated **₹681 crores but only ₹525 crores** had been utilised.
- **Afforestation** was solely for the purpose of boosting tree count, rather than taking into account soil and weather conditions.
- **Commercial plantations** (like eucalyptus) to enhance green cover, which couldn't make up for natural forests and was vulnerable to **insect infestations because they were monocultures.**

InstaCurious: In its new Nationally Determined Contribution, India pledged to reduce the emissions intensity of its gross domestic product by 45% by 2030, and to get 50% of its electricity from non-fossil fuel-based sources by 2030.

Insta Links: [State of Forest Report 2021](#)

Mains:

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)

Prelims Links: (UPSC 2016)

Which of the following best describe/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

CHEETAHS FROM SOUTH AFRICA

Context:

India has signed an agreement with South Africa to translocate 12 cheetahs (seven male and five female) to the **Kuno Palpur National Park (KNP)** in Madhya Pradesh.

Background:

- 'Cheetah' (*Acinonyx Jubatus Venaticus*) originates from Sanskrit and means '**the spotted one**'.
- The Cheetah is the **fastest land animal in the world**.
- Its **historical range** includes the **majority of Sub-Saharan Africa** and extends eastward to **India**.
- It is the **only large carnivore** that went 'Extinct' in India **due to overhunting and habitat loss**.
- The last cheetah died in the Koriya district of present-day Chhattisgarh in 1947 and the species was declared extinct in **1952**.
- According to the Wildlife Institute of India's (WII) "**Action Plan for Reintroduction of Cheetah in India**," **50 wild cheetahs** that are ideal for starting a new cheetah population would be imported as a founder stock over five years initially.
- The PM of India released the **first batch of eight cheetahs** (five females and three males) from Namibia into a quarantine enclosure at Kuno last year.
- Some modifications have been made to the current **bomas** (wildlife cages constructed often for the treatment or quarantine of animals).

Significance of reintroducing cheetahs:

- In-situ Conservation of species.
- **Beneficial to the entire ecosystem** → save its prey base comprising certain threatened species and endangered species of the grasslands and open forest ecosystems.
- They pose **no danger to humans** or large live-

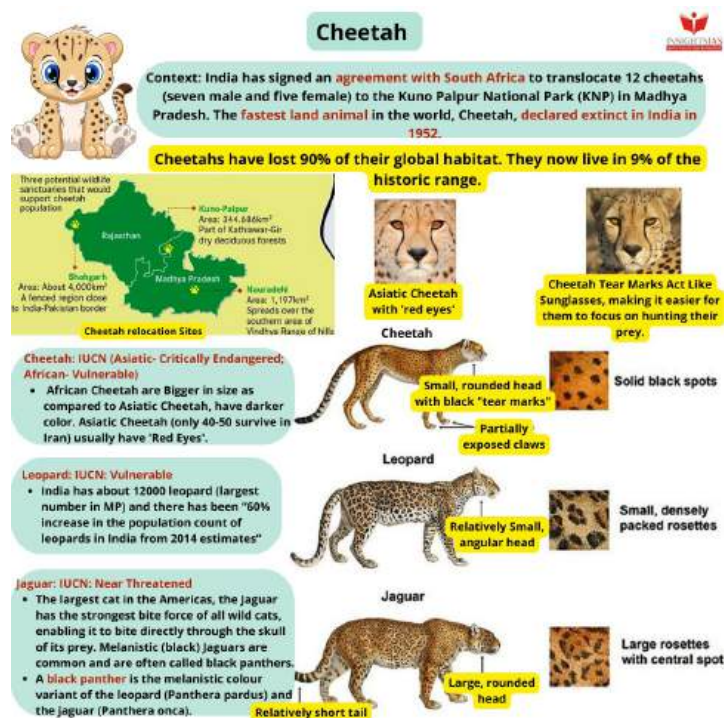
stock.

Why is KNP given the highest priority for reintroduction?

- Suitable habitat and adequate prey base.
- Assessed to be capable of supporting 21 cheetahs.
- **Devoid of human settlements:** Villages have been completely relocated from within the park.
- **Enables the coexistence of the four big cats** found in India - the tiger, lion, leopard, and cheetah, as they have in the past.

Why are cheetahs coming from Africa?

- Asiatic cheetahs found in Iran are categorised as critically endangered.
- The **highest genetic variation**, which is essential for a founding population stock, is found in African cheetahs.
- African cheetahs have been determined to be **the ancestors of all other Cheetah lineages**.



InstaCurious: The other sites recommended for holding and conservation breeding of cheetahs in India, in controlled wild conditions are:

1. Nauradehi Wildlife Sanctuary, Madhya Pradesh
2. Gandhi Sagar Wildlife Sanctuary – Bhainsrorgarh Wildlife Sanctuary complex, Madhya Pradesh
3. Shahgarh bulge in Jaisalmer, Rajasthan
4. Mukundara Tiger Reserve as the fenced enclosure, Rajasthan

Insta Links: [Cheetah reintroduction project](#)

Prelims Links: (UPSC 2020)

Which one of the following protected areas is well-known for the conservation of a sub-species of the Indian swamp deer (Barasingha) that thrives well on hard ground and is exclusively graminivorous?

1. Kanha National Park
2. Manas National Park
3. Mudumalai Wildlife Sanctuary
4. Tal Chhapar Wildlife Sanctuary

Ans: 1

Environmental pollution and degradation

LIGHT POLLUTING THE DARK SKY

Context:

- In 2022 Ladakh administration created the **Hanle Dark Sky Reserve (HDSR)**, the first International Dark Sky Reserve in India.
- The HDSR comprises six hamlets within the **Changthang Wildlife Sanctuary**.
- The **reserve had a responsibility to keep the skies dark**, particularly for the astronomical observatories located in the area.

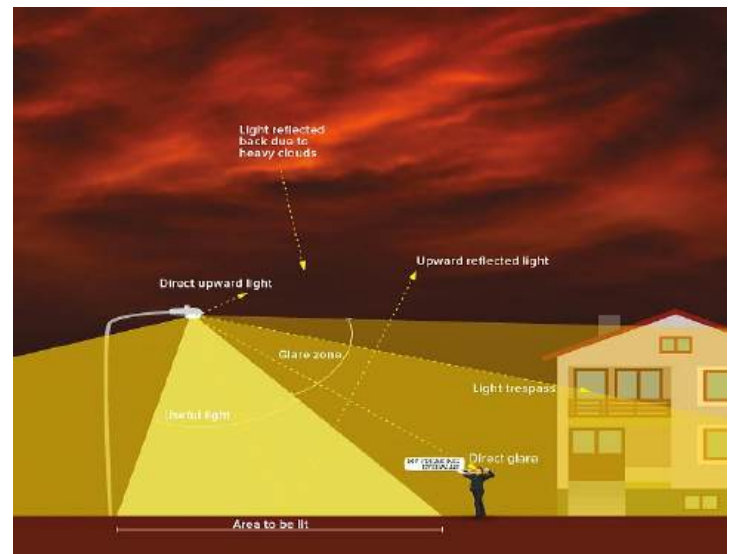
What is a Dark Sky Reserve?

- An area designated as **free from light pollution**.
- It's a public or private land possessing an **exceptional or distinguished quality of starry nights and nocturnal environment** that is specifically protected for its scientific, natural, education-

al, cultural, heritage and/or public enjoyment.

Background:

- When SpaceX's Starlink constellation of small satellites started to block ground-based telescopes' views of the Earth, the notion that the **sky is a natural resource** that could be harmed, gained popularity.
- It highlighted the **need for a global agreement** to reduce light pollution.
- This **skyglow** is causing significant **ecological, health and cultural ramifications**.



What is light pollution and how bad is it?

- Light pollution is **excessive, misdirected or obtrusive artificial (usually outdoor) light** that obstructs starlight in the night sky, interferes with astronomical research, disrupts ecosystems, has adverse health effects and wastes energy.
- Visible light emitted by many sources (except lasers) is **divergent**, so the light emitted could find its way into the sky.
- Almost all surfaces in cities also reflect light, meaning a portion of entirely down-cast light will be **reflected upwards**, contributing to night time light pollution.
- A study found that **non-natural light had increased the brightness of the artificial glow of the night sky, or skyglow, by 9.2-10% every year between 2011 and 2022**.

What is the situation in India?

- **19.5% of India's population** experiences a level

of skyglow that keeps the Milky Way out of sight and makes it impossible for human eyes to adjust to the dark.

- The effects include **stimulating the cone cells** (which activate in a well-lit environment/during the day) **in human eyes**.

What are the consequences?

- **Harms wildlife and disrupts ecosystems:** Light pollution poses a serious threat in particular to nocturnal wildlife, having negative impacts on plant and animal physiology. **For example,**
 - It can confuse the migratory patterns of animals.
 - It interferes with multiple aspects of insect life and allows insect predators to hunt for longer.
 - Parties to the Convention on Migratory Species have adopted guidelines to address this issue.
- **Adverse effects on human health:** It can disturb circadian rhythms and the production of melatonin, leading to sleep disorders and other health problems (increased risk of breast cancer).
- **Energy wastage:** lighting is responsible for at least one-fourth of all electricity consumption worldwide, thus adding to carbon footprint.

Way ahead:

Light pollution can be reduced easily by shielding lights properly, by

- Only using light when and where it is required,
- Only use the necessary amount,
- Using energy-efficient bulbs, and
- Using bulbs with the right spectral power distributions.
- **International Best Practice:** The “**Outdoor Lighting Code**” in the United Kingdom, aims to reduce light pollution by encouraging the use of lighting that is only as bright and as long as necessary for the task.

Conclusion:

“The erasure of the night sky acts to erase Indigenous connection to the stars, acting as a form of ongoing cultural and ecological genocide.”

InstaCurious:

Components of light pollution include:

- **Glare** – excessive brightness that causes visual discomfort
- **Skyglow** – brightening of the night sky over inhabited areas
- **Light trespass** – light falling where it is not intended or needed
- **Clutter** – bright, confusing, and excessive groupings of light sources

Insta Links: [Environmental Pollution](#)

Prelims Links: (UPSC 2020)

Which of the following are the reasons/factors for exposure to benzene pollution?

1. Automobile exhaust
2. Tobacco smoke
3. Wood burning
4. Using varnished wooden furniture
5. Using products made of polyurethane

Select the correct answer using the code given below:

1. 1, 2 and 3 only
2. 2 and 4 only
3. 1, 3 and 4 only
4. 1, 2, 3, 4 and 5

Ans: 1

FUKUSHIMA WASTEWATER

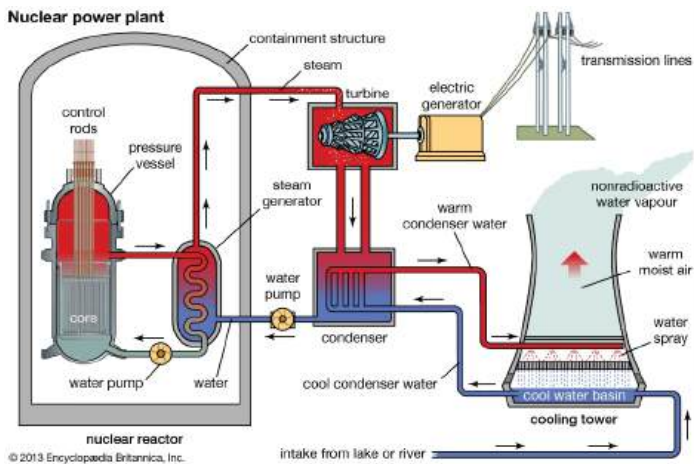
Context:

Japan is expected to **start flushing 1.25 million tonnes of wastewater from the embattled Fukushima nuclear power plant into the Pacific Ocean** this year, as part of its project to decommission the facility.

About Nuclear Power:

Nuclear power is electricity generated by **power plants that derive their heat from fission in a nuclear reactor**. Except for the reactor, which plays the role of a boiler in a fossil-fuel power plant, a nuclear power plant is **similar to a large coal-fired power plant, with pumps, valves, steam generators, turbines, electric genera-**

tors, condensers, and associated equipment.



What was the issue:

- In March 2011, after a magnitude 9 earthquake, a **tsunami** flooded the **Fukushima Daiichi** nuclear power plant in Okuma and damaged its diesel generators.
- The loss of power suspended the coolant supply to reactors at the facility; the tsunami **also disabled backup systems**.
- The water that the Japanese government wants to flush from the plant was **used to cool the reactors, plus rainwater and groundwater**. It contains radioactive isotopes from the damaged reactors and is thus itself radioactive.
- **Japan has said that it will release this water into the Pacific Ocean over the next 30 years.**

Treated Water:

- The **Tokyo Electric Power Company (TEPCO)**, which operates the Fukushima facility, **has treated the water to remove most radioactive isotopes**.
- Japanese government required the water to have **1/40th** as much tritium as the permitted limit.

Issues with discharging treated water into the Pacific Ocean:

- Difficult to **remove tritium** from the water.
- Tritium is easily **absorbed by the bodies of living creatures and rapidly distributed via blood**.
- Other radionuclides include isotopes of **ruthenium and plutonium**, which could persist for longer in the bodies of marine creatures and on the seafloor and could not be completely removed.

Other options available with Japan:

- **Store the water for longer and then discharge it as tritium's half-life – the time it takes for its quantity to be halved through radioactive decay – is 12-13 years. So, at the time of discharge, the water could be less radioactive.**

Insta Link: [Nuclear Energy](#)

Mains Link:

Q. Though nuclear energy is a source of clean energy but the vulnerabilities of nuclear reactors make them prone to disasters. Examine.

GS4

Attitude

THE WOMAN WHO DEFIED REAL POLITIK

Context:

New Zealand's Prime Minister, **Jacinda Ardern** who announced her resignation citing burnout, **offered an alternative leadership model rooted in a moral vision rather than political opportunism** and rose to become a global hero of liberalism.

- She is considered a classic example of **ethical leadership**.



About Ethical Leadership:

Ethical leadership is the practice of **demonstrating appropriate conduct inside and outside the office**. It is mainly concerned with **moral development and virtuous behaviour**. Ethical leaders display good values through their words and actions.



Lessons from the life of Jacinda Ardern:

Motherhood is powerful

- Jacinda Ardern became the **second world leader (After Benazir Bhutto)** to ever give birth and subsequently take maternity leave while in office. She said, "I'm just pregnant, not incapacitated".
- Multitasking:** The Prime Minister then made history and headlines worldwide when **her three-month-old child accompanied her to a United Nations General Assembly in New York City**.

Keeping calm under pressure

- The New Zealand Prime Minister has demonstrated her ability to **stay cool numerous times throughout the coronavirus pandemic, but it was her response to a 5.8 magnitude earthquake** that set the tone for her approach to a crisis. During a live television broadcast, the parliament building she was in was hit with a mammoth natural disaster.
- Her ability to immediately **gather her thoughts and address a crisis can be a learning lesson for all of us**.

Act swiftly, decisively and do not downplay situations

- Her decisiveness during the COVID-19 pandemic had a huge impact on how the **country handled the crisis and the measures she implemented**.
- Not once did she attempt to downplay the severity of the crisis. Instead, **she offered facts, educated herself on the data, and made tough choices that would ultimately allow New Zealand to handle the pandemic astutely and save many lives**.

Responsible leadership: The PM, along with her ministers took a pay cut of 20% for 6 months during the pandemic. In her own statement – **"While it in itself won't shift the government's overall fiscal position, it is about leadership"**.

Emotional intelligence

- During the pandemic, Prime Minister **Ardern showed her humane side and fostered the public's trust by acknowledging the emotional aspect brought on by the crisis**.
- She even went so far as to **reassure children that the Easter Bunny was classified as a key worker and would be able to do their Easter rounds as always**. While this may seem like a small gesture, the fact that she incorporated such an emotional response into her address **showed her humanity and her relatability**.

Effective Communication: The underrated value of listening and asking

- Ardern used **regular Facebook Live sessions to check in with citizens during their relatively brief time in lockdown**.
- In an incredibly informal, chatty manner, she effortlessly demonstrated consideration and empathy, whilst also delivering **some tough messages, and providing clear direction to mobilize effort**.
- To support citizens through lockdown, Ardern also conducted a **series of video interviews in which she conversed with experts, including a psychologist about coping with the stresses of the pandemic**, and an experienced business mentor about supporting small businesses.

Clear vision and humility

- Jacinda had earlier **mentioned child poverty as the reason why she joined politics at the age of 17**. She often visited refugee children as a part

of working for an international youth organization.

"If you ask me why I'm in politics, my answer would be simple -- children. I genuinely believe our success as politicians should be based on the status of children. We need to change how we measure success and our indicators for action," she had said in an **ardent speech at the Social Good Summit 2018**.

Trust

- Demonstrate credibility – for instance, by gaining the necessary knowledge and data and/or drawing upon relevant experience
- Show reliability – be honest and do what you say you will do
- Create intimacy – share some of yourself and be interested in others
- Limit self-orientation – keep your self-interest in check



Strength and solidarity are key

- In March 2019, Jacinda Ardern responded to a series of **terrorist attacks on mosques in Christchurch with an approach that supported the people of New Zealand** and quickly banned military-style assault weapons in the country. The leader **refused to name the shooter in order to avoid giving him notoriety** and assisted in uniting not only the people of Christchurch but New Zealand as a whole.
- Ms Ardern **wore a hijab and went to mourn with the grieving families**. By keeping the focus on the victims rather than the perpetrator, she brought a healing touch to an otherwise tense, polarising moment.

Inclusivity

- She appointed **Nanaia Mahuta, a Maori woman**, in the high-profile **portfolio of foreign ministers**, while her party vowed that schools in the country would have the **Māori language integrated into their curriculum by 2025**.

In a world where politics is synonymous with realpolitik, **she demonstrated that politics informed by a moral vision** — doing the right thing rather than what best suits one's interests — **is not unthinkable**.

Quote:

At the heart of her leadership style:

"Kindness, and not being afraid to be kind, or to focus on, or be really driven by empathy. I think one of the sad things that I've seen in political leadership is – because we've placed so much emphasis on notions of assertiveness and strength over time – that we've probably assumed that it means you can't have those other qualities of kindness and empathy. And yet, when you think about all the big challenges that we face in the world, that's probably the quality we need the most."

Jacinda Ardern

InstaCurious:

Transformational leadership is defined as a leadership approach that causes a change in individuals and social systems. In its ideal form, it creates valuable and positive change in the followers with **the end goal of developing followers into leaders**. It refers to a leadership style that **focuses on inspiring and motivating followers** to not only achieve their goals but also to develop their own leadership potential.

Nolan Committee Recommendations – Find the link below.

Insta Links: [Anonymity or Fame](#)

Mains Link:

Q. What are the basic principles of public life? Illustrate any three of these with suitable examples.

FACTS FOR PRELIMS

GS1

Indian Heritage and Culture

BUDDHIST MONASTERY COMPLEX AT BHARATPUR

Context:

Recent excavations at **Bharatpur in West Bengal's Paschim Bardhaman district** have revealed the presence of a Buddhist monastery.

Findings from the previous excavations (between 1972 and 1975)

- A large Buddhist stupa was found
- Black and red ware pottery from the Chalcolithic Age
- Five beautiful seated sculptures of the Buddha in Bhumisparsha Mudra -- with all five fingers of the right hand extended to touch the ground -- were found

About Buddhist stupa:

A Buddhist stupa is a **commemorative monument usually housing sacred relics** associated with the Buddha

About Bhumisparsh Mudra: It symbolizes the **Buddha's enlightenment under the bodhi tree**, when he summoned the earth goddess, Sthavara, to bear witness to his attainment of enlightenment.

About Chalcolithic Period:

The Chalcolithic or Copper Age is the **transitional period between the Neolithic and the Bronze Age**. It is taken to begin around the **mid-5th millennium BC** and ends with the beginning of the Bronze Age proper, in the late 4th to 3rd millennium BC, depending on the region



ANDAMAN ISLANDS NAMED AFTER PARAM VIR CHAKRA RECIPIENTS

Context:

PM Modi named the **21 largest unnamed islands of Andaman & Nicobar Islands** after India's 21 Param Vir Chakra awardees.

- The ceremony was organised on the occasion of **Parakram Diwas, Netaji Subhas Chandra Bose's birth anniversary**
- Previously, **Ross Island was renamed Netaji Subhash Chandra Bose Dweep** in 2018

About Param Vir Chakra

The Param Vir Chakra is **India's highest military decoration**, awarded for displaying distinguished acts of valour during wartime. Param Vir Chakra translates as the **"Wheel of the Ultimate Brave"**, and the award is granted for **"most conspicuous bravery in the presence of the enemy"**. It was **1st awarded in 1947 and last awarded in 1999**

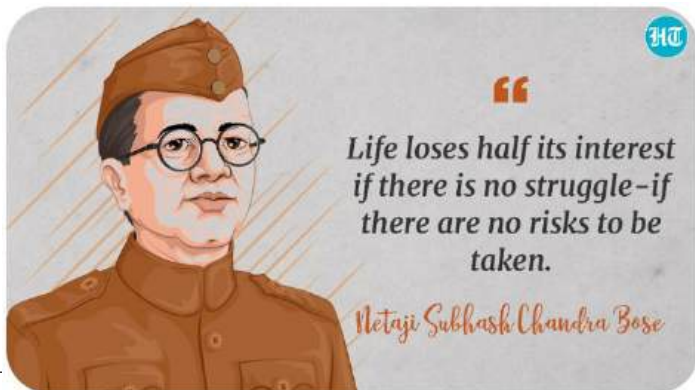
About Subhas Chandra Bose:

- Personal:
 - Birth: He was born on 23rd January 1897, in Cuttack
 - He was highly influenced by Vivekananda's teachings and considered him his spiritual Guru.
 - His political mentor was Chittaranjan Das.
- Freedom struggle
 - Newspapers: Chittaranjan Das's newspaper 'Forward' (as Editor) and his own newspaper, Swaraj.

- Slogans: 'Jai Hind', 'Give me blood and I will give you freedom', 'Chalo Dilli', 'Itmad (Faith), Ittefaq (Unity) and Kurban (Sacrifice)
- Bose was the first person to address Mahatma Gandhi as the Father of the Nation
- He opposed the Motilal Nehru Report (dominion status for India) and wanted complete independence.
- Became congress president at Haripura in 1938.
- He founded a new party, 'the Forward Bloc' (to consolidate the political left in Bengal)
- Indian National Army: He announced the formation of the Azad Hind Government and the Indian National Army on 21st October 1943.
 - **The INA was first formed under Mohan Singh and Japanese Major Iwaichi Fujiwara and comprised Indian prisoners of war of the British-Indian Army captured by Japan in the Malayan campaign and at Singapore.**
- Other Honors in his name:
 - **Subhas Chandra Bose Aapda Prabandhan Puraskar** (disaster management)
 - His birthday is celebrated as '**Parakram Diwas**' on 23rd January.

Ethical Lessons from his life:

- **Courage:** Indira Gandhi said Subhas Chandra Bose's 'restless and dynamic spirit led him to a path that was somewhat different from our own', but 'he was a path of courage'.
- Value of **sacrifice**
- Value of **Struggle**
- **Patriotism**



ASSAM'S CHARAIDEO MOIDAMS

Context:

Central government has put forth the name of **Assam's Charaideo moidams burial sites** in addition to United Nations Educational, Scientific and Cultural Organization's (UNESCO) World Heritage Sites list for 2023-24.

- If selected it will be the only cultural heritage site in the North East to get the coveted status

What is Charaideo Moidams?

It is also known as the 'Pyramids of Assam' and was the original capital of the Ahom Kings. It contains **sacred burial grounds of Ahom kings and queens** and is also the place of the ancestral Gods of the Ahoms.

- **Che-Rai-Doi:** "Che" means city or town, "Rai" means "to shine" and "Doi" means hill. In short, Charaideo means, "a shining town situated on a hilltop."
- A moidam is a tumulus – a mound of earth raised over a grave
- **Built by:** Chaolung Sukhapa (founder of the Ahom dynasty in about 1253 CE)
- **Located at** around 30 Km from the historical Sivasagar town in Assam at the foothills of Naga-land
- **Features:** It comprises a **massive underground vault with one or more chambers having domical superstructure** and covered by a heap of earthen mounds and externally it appears a hemispherical mound.
 - **90 royal burials at Charaideo in total**

About Ahom Kingdom:

It was established in **1228** in the **Brahmaputra valley** of Assam, the Ahom kingdom retained its sovereignty for 600 years. The Ahoms ruled the land till the province was annexed to British India in **1826** with the signing of the **Treaty of Yandaboo**.

- The Ahom state depended upon forced labour (Called **Paiks**).
- Recently, **Ahom general and folk hero Lachit Borphukan's 400th birth anniversary** was celebrated. Traditionally Ahoms are members of the Great Tai (Tai-Yai) group of people.



Shri – for his work on Etikoppaka wooden toy craft which is also a GI-tagged product from the state.

About Etikoppaka toys:

- The art of making traditional wooden Etikoppaka toys is more than 400 years old.
- Also known as **turned wood Lacquer craft**.
- The toys are unique in shape and form.
- They are made of **wood and painted with natural dyes**.
- The wood used is from the 'Ankudi Karra' (*Wrightia tinctoria*) tree which is soft.
- The natural dyes are prepared from **seeds, lacquer, bark, roots, and leaves**.
- Other GI products from Andhra Pradesh: Kondapalli toys, Tirupati laddu, Bobbili Veena, Srikalahasthi Kalamkari, Uppada Jamdani sarees, and Shadow puppets.



MONUMENT MITRA SCHEME

Context:

The government to hand over around 1,000 monuments to the private sector for their upkeep under the Monument Mitra Scheme.

About Monument Mitra Scheme / Adopt A Heritage:

- The Scheme was started under the Ministry of Tourism.
- It is now transferred to the Ministry of Culture in respect of the monuments under the Archaeological Survey of India, the ASI.
- Applies to all Centrally protected heritage properties.
- Aims at ensuring quality & inclusive provision of amenities and facilities across heritage, natural, & tourist sites through the active participation of private and public sector organizations and individuals.
- These organizations would be known as "Monument Mitras" for their collaboration initiative.

ETIKOPPAKA TOY CRAFT

Context:

An artist from Andhra Pradesh was conferred Padma

CRITERIA FOR DECLARING NATIONAL MONUMENTS

Context:

The Economic Advisory Council to the Prime Minister (EAC-PM) has suggested that the government should come up with a detailed procedure for declaring 'Monuments of National Importance' (MNI)

'Monuments of National Importance - Urgent Need for Rationalisation':

- **Absence of definition of term 'National Importance'**
- **Allocation of funds** for the protection of MNI should be increased
- ASI should **publish a book of notifications** for all MNI
- **Remove unimportant ones:** E.g., around 75 Brit-

ish cemeteries/graves are considered as MNI

- **24 monuments** of national importance are **untraceable**, but still considered as MNI
- **Minor monuments and antiquities** should be **denotified** as MNI and monuments with local importance should be transferred to **respective states for protection**
- **Over 60 per cent of MNI are located in just 5 states** - Uttar Pradesh, Karnataka, Tamil Nadu, Madhya Pradesh and Maharashtra. While the city of Delhi alone has 173 MNI

India currently has 3,695 MNI that are under the protection of ASI. The **Ancient Monuments and Archaeological Sites and Remains Act (AMASR Act), 1958, (amended in 2010)** provides for the declaration and conservation of ancient and historical monuments and archaeological sites and remains of national importance. **The Central Government** is authorised to maintain, protect and promote the monuments.

Criteria for declaration of the monument as national importance

- Ancient monument or archaeological site is **not less than 100 years old**
- It has a **special historical, archaeological or artistic interest**
- **No objection** from interested public

and it is believed that he was an acquaintance of Abdurrahim Khan-e-Khanan, the son of Akbar's commander **Bairam Khan**.

- Tulsidas made the story of Lord Ram popular among the masses because he wrote in the **regional dialect that most people understood**.
- This attracted the wrath of ancient Sanskrit scholars, and Tulsidas recorded his pain in his **Kavitawali**.



Festival in News

RAMCHARITMANAS OF TULSIDAS

Context:

In news due to a recent controversial statement made by a state minister against Ramcharitmanas.

The Ramcharitmanas:

- The **poem** was written in the **16th century** in the **Awadhi** dialect.
- It is divided into **seven chapters** (Kand) that tell the **story of Lord Ram from birth to his becoming King of Ayodhya**.
- The Ramcharitmanas is based on the **Ramayana** - sage Valmiki's great epic.

Goswami Tulsidas:

- Tulsidas, a Brahmin whose original name was **Ram Bola Dubey**, composed the **Ramcharitmanas** on the bank of the Ganga in Varanasi.
- Tulsidas was a contemporary of **Emperor Akbar**,

BHARAT PARV 2023

Context:

The six-day mega event "**Bharat Parv**" is being organized by the Government of India, as part of the **Republic Day Celebrations**.

About Bharat Parv:

- Bharat Parv was previously held from **2016 and virtually in the year 2021**
- The physical event is being organized after a gap of 2 years.
- The event would have a **Food Festival, Handicraft mela, folk and tribal dance performances, performances by cultural troupes, a Display of Republic Day Tableaux, illumination of Red Fort etc.**
- Branding and promotion of **Dekho Apna Desh, Ek Bharat Shreshtha Bharat, G20 and Mission LIFE** would be undertaken during the event.

- **Ministry of Tourism** has been designated as the **nodal Ministry for the event**, the highlights of which include showcasing of the best Republic Day Parade tableaux at the venue, cultural performances by the Zonal Cultural Centres as well as cultural troupes from States/ UTs, a pan – India Food Court and a pan – India Crafts Bazaar.

Significance Of Bharat Parv:

- To Promote the **Spirit Of Freedom**
- To **celebrate independence and the history of India**.
- **Extension Of Republic Day Events**.
- Promoting India's **Food Diversity**
- Promoting **Vocals for Local**

Modern History/Personality

SWAMI SAHAJANAND SARASWATI

Context:

Celebrations commemorating farmer leader Swami Sahajanand Saraswati's birth anniversary

Swami Sahajanand Saraswati:

- He (real name Navrang Rai) was an ascetic, a nationalist and a peasant leader of India.
- **The Bihar Provincial Kisan Sabha (BPKS)** was founded by Saraswati in **1929** to address peasants' complaints about zamindari attacks on their occupancy rights, and served as the foundation for the farmers' movements in India.
- **The All-India Kisan Sabha (AIKS)** was established at the Lucknow session of the Indian National Congress in April **1936**, with **Saraswati chosen as its first President**.
- Subhash Chandra Bose and the All India Forward Bloc decided to observe April 28 as All-India Swami Sahajanand Day in protest of his arrest by the British Raj during the **Quit India Movement**.

ARCHITECT BV DOSHI PASSES AWAY

Context:

Renowned architect of **post-Independent India**, **Balkrishna Doshi** died on January 24.

His Contribution:

- To the evolution of architecture:
 - **Founder of Ahmedabad's School of Architecture**
 - Having worked under Le Corbusier and Louis Kahn, he is a pioneer of modernist architecture in India
 - He established Indian architecture on the global platform through his humanist approach to design
- **Infrastructure projects:** Designer of IIM Bangalore, IIM Udaipur, NIFT Delhi, Amdavad ni Gufa, CEPT University, NIFT Delhi and the **Aranya Low-Cost Housing development in Indore** which was awarded the **Aga Khan Award** for Architecture.
- **Awards**
 - **2018:** He became the first Indian architect to receive the **Pritzker Architecture Prize**, which is considered one of the most prestigious prizes in architecture.
 - **2020:** Padma Shri and the Padma Bhushan.
 - **Royal Institute of British Architects Royal Gold Medal for 2022**

Ethical lessons from his life:

- **Innovations**
- **Creativity**
- **Humanity:** BV Doshi gave Indian architecture a human face.
- **Compassion:** Designing houses for poor

About Pritzker Architecture Prize (regarded Nobel Prize for Architecture)

The Pritzker Architecture Prize (est. 1979) is an international architecture award presented annually "to honour a **living architect or architects** whose built work demonstrates a combination of those qualities of talent, vision and commitment.

Geography

EARTH'S INNER CORE ROTATION

Context:

Research suggested that Earth's inner core, a hot iron ball the size of Pluto, has stopped spinning faster than the planet's surface and might now be rotating slower than it.

How does the core spin:

- The inner core rotates **within the liquid outer core**.
- The solid inner core is **suspended, floating, in the molten outer core**.
- The inner core's **independent rotation is caused by a process called convection**.
- Its movement is caused by the outer core's mag-

netic torque and balanced by gravitational force.

- The **mantle's immense gravitational pull** may be the reason for the pause and shift in the inner core's rotation.

How do we study the inner core:

Scientists rely on **seismic waves created by earthquakes or sometimes nuclear explosions** –to know about the structure of the interior of the Earth.

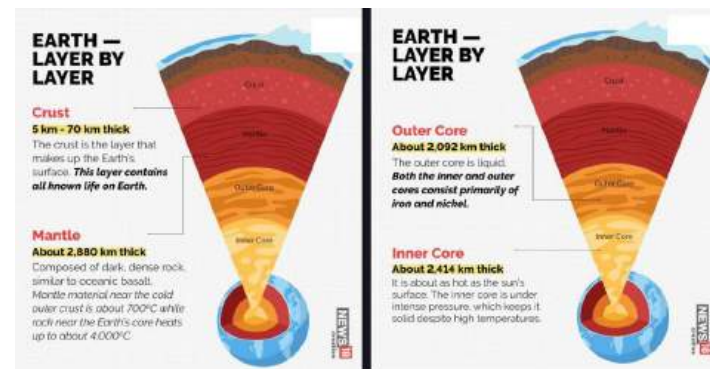
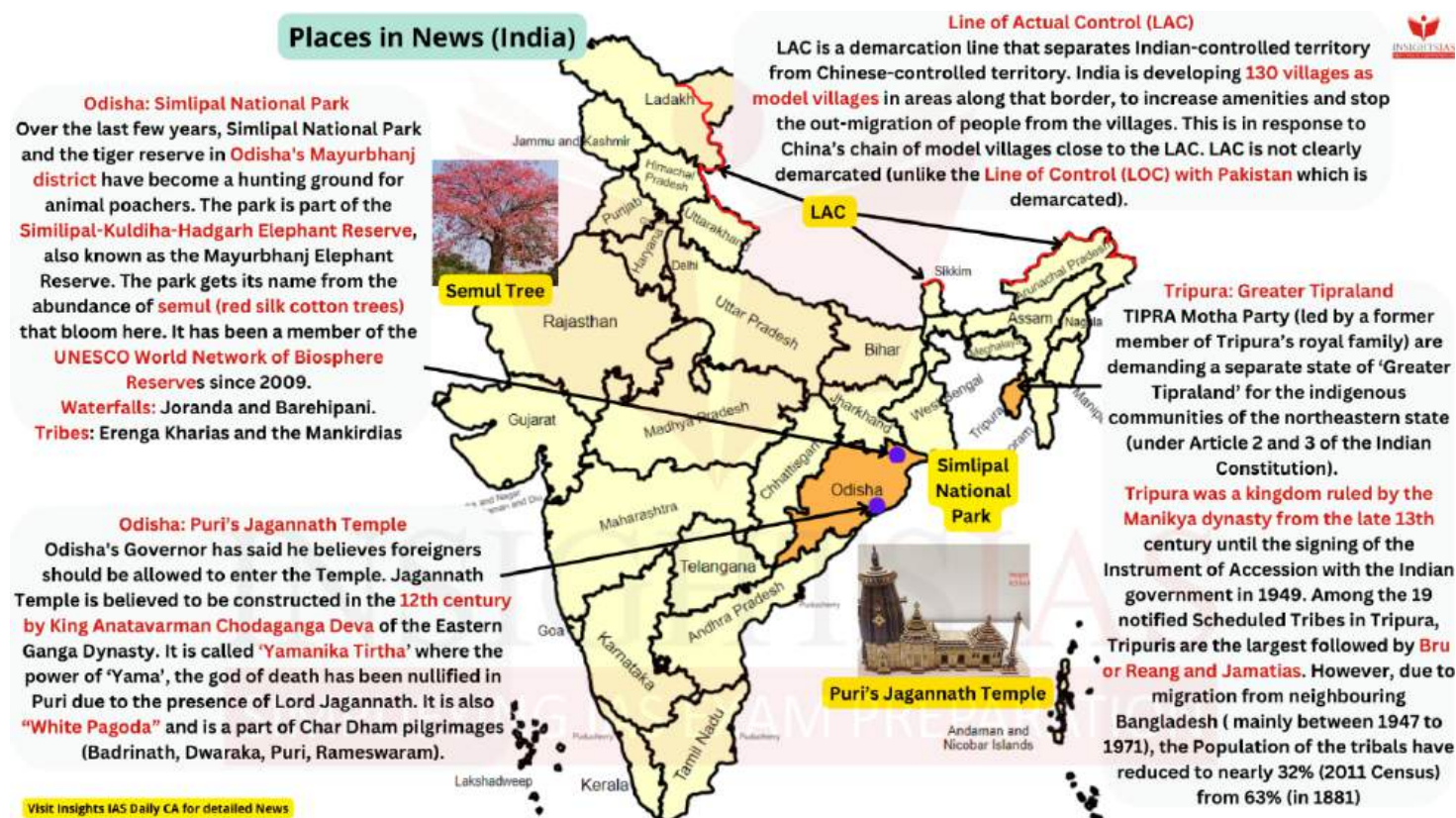


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Places in News

MAPPING





USA
The USA designated the Russian firm Wagner Group as a criminal organization. Wagner Group (PMC Wagner) had taken delivery of an arms shipment from North Korea to help bolster Russian forces in Ukraine. The Wagner Group is a Russian paramilitary organization consisting of a private military company, a network of mercenaries, or a de facto private army of Russian President Vladimir Putin.

Chile: Mapuche
The Mapuche are indigenous inhabitants of Chile and Argentina, who were originally from the forests of the southern Andes. The new constitution to empower Chile's Indigenous people (80 per cent of whom are Mapuche) was defeated in September last year (2022).

Places in News (World)

Russia & Estonia expel each other's ambassadors:
From 1940 until 1991, Estonia was under Soviet occupation and fear Russia might also attempt to reoccupy Estonia.

Netherland
The Dutch government plans to close the Earthquake-prone Groningen gas field this year due to safety concerns. Groningen is the largest gas field in Europe.

Malawi
Malawi had almost eradicated cholera. But now more than 900 people died of it over the past 11 months. Cholera is a bacterial disease usually spread through contaminated water. Cholera causes severe diarrhoea and dehydration. Left untreated, cholera can be fatal within hours.

Tanks for Ukraine
Poland, Canada, Norway and Spain have said they will be sending additional 60 tanks to Ukraine including German-made Leopard 2 tank.

Thailand: Yellow-Band Disease
Yellow band disease is killing corals over the sea floor of Thailand due to overfishing, pollution and rising water temperature. Yellow-band disease (by pathogens such as bacteria and fungi) - named for the colour it turns corals before destroying them. There is no known cure. The disease's impact cannot be reversed, unlike the effects of coral bleaching.

Yellow-Band Disease
Lake Victoria is Africa's largest lake by area, the world's second-largest freshwater lake by surface area after Lake Superior in North America. It has been suffering from a variety of unsustainable human activities over the last five decades. It is shared by three countries - Tanzania, Uganda and Kenya.

Tanzania: Lake Victoria
Lake Victoria is Africa's largest lake by area, the world's second-largest freshwater lake by surface area after Lake Superior in North America. It has been suffering from a variety of unsustainable human activities over the last five decades. It is shared by three countries - Tanzania, Uganda and Kenya.

Australia
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Society and Social Justice

CRITERIA CHANGE IN GENDER GAP REPORTS

Context:

The World Economic Forum (WEF) will take into account the **participation of women at the panchayat level to rank countries** in its future Global Gender Gap reports.

- This will improve India's position at the global level (currently **India ranks 135 Out Of 146** in the 2022 Gender Gap report)
- Previously, India had reiterated the "flaws" in the ranking system.

The **Global Gender Gap Index** benchmarks the current state and evolution of gender parity across four key dimensions:

- Economic Participation and Opportunity
- Educational Attainment
- Health and Survival
- Political Empowerment

About Global Gender Gap Index:

It is the longest-standing index which tracks progress towards closing Gender gaps over time since its inception in 2006.

About WEF:

The World Economic Forum is an international **non-governmental** and lobbying organisation based in Switzerland. It was founded on 24 January 1971 by German engineer and economist Klaus Schwab.

The gender score | India ranked 135 in gender parity out of 146 countries, according to the Global Gender Gap Report 2022 released by the World Economic Forum. A look at India's ranking in the four sub-indexes based on which the overall ranking was determined

India	Rank 2022*
Global gender gap index	135
Economic participation and opportunity	143
Educational attainment	107
Health and survival	146
Political empowerment	48

*out of 146 countries



Related news

Good news for gender parity in science

Girls routinely outperform boys in boards and medical entrance. But in JEE, the results have long highlighted glaring gendered disparity. This year, for the first time, **women make up 30% of the IIT-JEE applicant pool.** In India, women make up **43% of the STEM education pool**, one of the highest ratios in the world.

GS2

Polity

13TH AMENDMENT (13A) TO SRI LANKA'S CONSTITUTION

Context:

India has reiterated that full implementation of 13A is "critical" for achieving reconciliation with the minority Tamil community.

What is SL's 13th Amendment?

The 13th amendment, originally certified in 1987, states that Tamil will be one of Sri Lanka's official languages and that provincial councils, with substantial authority, will be established throughout the country.

Origin:

It was brought after the Indo-Sri Lankan agreement of 1987 for the devolution of power to the Tamil community.

In the case of the US: The Thirteenth Amendment to the United States Constitution abolished slavery and involuntary servitude, except as a punishment for a crime.

SUPREME COURT JUDGMENTS IN 13 INDIAN LANGUAGES

Context:

Supreme Court will release **1,268 judgments in 13 Indian languages** on Republic Day in a bid to make justice administration more accessible to the common man.

- The judgments would be made available in the

court's e-SCR portal.

About e-SCR Portal:

- The portal is the **repository of the electronic version of Supreme Court Reports (SCR)**
- It provides **free access and an elastic search facility** to about 34,000 of its judgments.
- Benefits of e-SCR:** The move has benefitted law students, young lawyers who cannot afford expensive books which record apex court judgments and even the public.

Related News:

The judgements delivered by SC will now be translated into **four languages- Hindi, Tamil, Gujarati and Odia.** Also, **Online e-Inspection Software** to facilitate online **e-inspection of digitized judicial files** through the internet was launched at Delhi High court.

Article 348(1) of the Constitution of India provides that all proceedings in the Supreme Court and in every High Court shall be in the English language until Parliament by law otherwise provides.

Article 348 (2) provides that the Governor of the State may, with the previous consent of the President, authorize the use of the Hindi language or any other language used for any official purpose of the State, in the proceedings of the High Court

Government Initiative and Policies

CHARGESHEET AND FIR

Context:

The Supreme Court held that the **public cannot be given free access to a charge sheet** or a final investigation report as it is not a public document.

What is Charge Sheet?

A chargesheet is prepared after First Information Reports and charges an individual for the crimes specified in those FIR. It shows the names of each person brought into custody the nature of the accusations, and the identity of the accusers.

Distinction between FIR Charge sheet

FIR	Charge sheet
It is preliminary report	It is final report
It is prepared by victim of crime	It is prepared by investigation officer
It is file in police station	It is file in court
It is having purpose of investigation	It is having purpose of trial
It can be with draw in petty offences	It cannot be with draw

CENTRAL GOVERNMENT HEALTH SCHEME

Context:

The National Health Authority (NHA) is in the process of integrating the Central Government Health Scheme (CGHS) with the **Ayushman Bharat Digital Mission (ABDM)**

- Aimed at **creating digital health identification of CGHS beneficiaries** and storing their digital health records, thus ensuring quick treatment to the needy

About CGHS:

CGHS was started in 1954 with the aim of providing comprehensive healthcare to central government employees and pensioners and their dependent family members. The scheme currently covers more **than 4 million beneficiaries** in 75 cities

Related news:

Ayushman Bharat School Health and Wellness Programme (SHWP) has less than 50% uptake

Context: Almost three years after its implementation, with a robust syllabus from NCERT, less than half of India's States have started weekly classroom sessions with students

Reasons for less uptake: **Overwork of government teachers**, not all States have set aside the weekly time slot in the classroom schedule, no formal reporting structure or accountability

About SHWP:

SHWP under Ayushman Bharat was launched in **2018**.

Aim: It aims to create awareness about age-appropriate information about health and nutrition among children in schools.

- Role of teachers:** Teachers act as "**Health and Wellness Ambassadors**" and disseminate various key information by organising culturally sensitive activity-based sessions for one hour per week for 24 weeks a year to **promote joyful learning**.
- Two teachers**, preferably one male and one female, in every school, are to be designated as HWAs
- Role of students:** Students act as Health and Wellness Messengers in society.
- Every Tuesday** is dedicated to Health and Wellness Day in the schools
- Implementation:** middle, secondary, and senior

secondary grades across government and government-aided schools

- Syllabus:** NCERT+ Ministry of Health+ Ministry of Human Resource Development (HRD)
- Curriculum:** It covers 11 core themes including managing emotional and mental health, navigating interpersonal relationships, and promoting the safe use of the internet and social media.

Other similar programmes are the Fit India movement, Eat Right campaign, Poshan Abhiyaan, Rashtriya Kishor Swasthya Program and Rashtriya Bal Swasthya Programme.



PM-KISAN

Context:

- The Centre may increase the income support provided to farmers under the **PM-KISAN scheme** from Rs 6,000 to 8,000 rupees/year.
- It is an effort to **boost consumption and rural demand**.

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN):

- The number of beneficiaries has **crossed 110 million** from 31 million at the beginning of the scheme and financial assistance of more than **Rs 2 trillion has been provided to needy farmers** in over 3 years.
- The scheme addressed the liquidity constraints** of farmers for buying agricultural inputs, daily consumption, education, health and other incidental expenses, especially during the Covid pandemic.
- A Niti Aayog member suggests converting the PM-KISAN program into a **Universal Basic Income (UBI)** program that covers other vulnerable groups, such as farm labourers, etc.


PM KISAN


Context: Centre may increase the income support provided to farmers under the PM-KISAN scheme from Rs 6,000 to 8,000 rupees/year

About PM-Kisan scheme

- It is a **central sector scheme** (100% centrally funded) and was launched in **Feb 2019**, to provide income support to the farmers and their families.
- **Support amount:** Under the scheme, income support of **₹6,000 per year** in three equal installments of ₹2000 is provided to **all landholding farmers** (initially limited to small and marginal farmers but later extended to all)
- **Nodal Ministry:** Ministry of Agriculture and Farmer's welfare
- **Physical Verification Module:** A mandatory physical verification of **5%** beneficiary every year is being done as per the provisions laid down in the scheme.
- **Mode of Transfer:** Via Direct Benefit Transfer (DBT)
- **Exclusions:** All institutional landholders; or if one of the family members hold government job (excluding MTS/Class IV/ Group D employee); or has paid income tax in last assessment year.


Similar programmes by states:

1. Bhavantar Bhugtan Yojana- MP.
2. The Rythu Bandhu scheme- Telangana.
3. Krushak Assistance for Livelihood and Income augmentation (KALIA)- Odisha

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hold the largest chunk of Sri Lanka's foreign debt, may have to take a haircut.

What is a Haircut?

When a bank or creditor country takes a 'haircut', it means **it accepts less than what was due in a particular loan account**. For example: if a bank was owed Rs 10,000 cr by a borrower and it agrees to take back only Rs 8,000 cr, it takes a 20% haircut.

THE RULES OF 'HAIRCUT'

'Haircut' refers to reduction in loan amount banks willingly make

Once recent cases is Videocon case where creditors agreed for 96% haircut

For the cases resolved under the Insolvency law in 2020-21, the average haircut was 60%

moneycontrol

International News and Organization

INDIA - SRI LANKA: TIES DURING CRISIS

Context:

Recently IMF has confirmed receiving India's written financing assurance in support of Sri Lanka's economic revival.

The economic crisis in Sri Lanka:

Sri Lanka is grappling with a shortage of foreign currency, higher inflation and a steep recession – the worst such crisis since its independence from Britain in 1948.

- **India, China and Japan** are Sri Lanka's three largest bilateral creditors
- **Sri Lanka** has an overall debt of around **52bn US dollars** (nearly **40%** is owed to private creditors, of the rest **60%** is owned to bilateral partners: China owns 52%, Japan (19%) and India (12%))

The recovery plan:

Previously experts in Sri Lanka had asked lenders (creditors) to take a 'Haircut' on their lending. However, as per the new plan, **none of the official lenders** would take a **haircut while giving Sri Lanka time to recover** with an IMF programme. But **private creditors**, who

T+1 SETTLEMENT CYCLE

Context:

After China, India (on SEBI's recommendation) will become the second country in the world to start the '**trade-plus-one**' (T+1) settlement cycle in top-listed securities.

What is the T+1 settlement cycle?

In simple terms, T+1 settlement means that securities transactions will reflect in the Demat account after a day instead of two days now under the T+2 cycle.

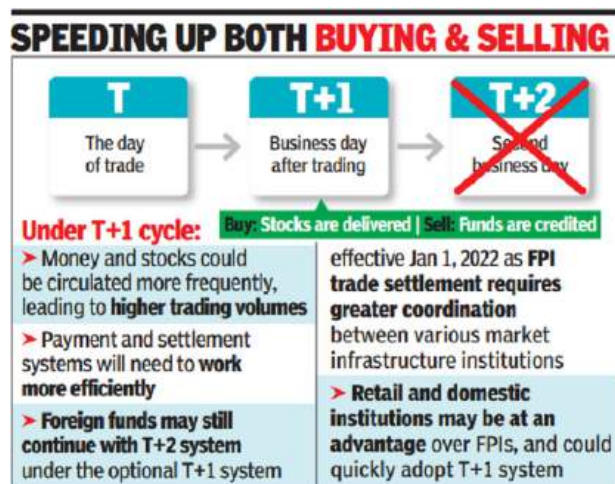
Benefits of the move:

- Brings operational efficiency
- Faster fund remittances
- Share delivery
- Ease for stock market participants
- Reduces risks and frees up capital required to collateralise the risk
- Reduces the number of outstanding unsettled trades at any point in time

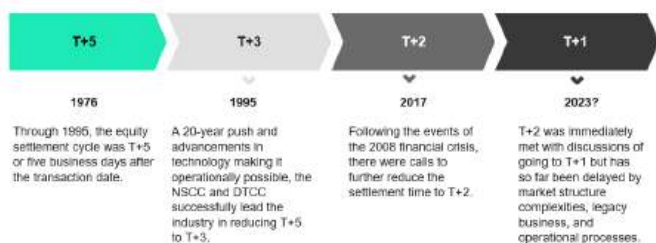
Why are foreign investors opposed?

Foreign investors operate from **different geographies leading to time zone differences, information flow processes**, and foreign exchange problems. Foreign investors said they would also find it difficult to hedge their net India exposure in dollar terms at the end of the day under the T+1 system.

- The United States, United Kingdom and Euro-zone markets are yet to move to the T+1 system.



T+5 to T+1: Transaction Settlement in History



What will Fisheries subsidies do?

- It will prohibit subsidies from being provided for **Illegal, Unreported and Unregulated (IUU) fishing**, fishing in high seas and over-fished stocks.
- **Transition Period Allowance:** Developing Countries and Least Developed Countries (LDCs) have been allowed a transition period of **two years** from the date of entry into force of this Agreement.
- **Fund for developing and least-developed countries:** For technical assistance and capacity building
- **Exempted Areas:**
 - No prohibition if the WTO Member is not carrying out IUU.
 - No prohibition on providing subsidies if subsidies are implemented to rebuild the stock to a biologically sustainable level.

India's Stand:

By the principle of '**Common but differentiated responsibilities**' developed countries (who have provided huge subsidies in the past) should take more responsibilities.

- India is the **third-largest fish-producing country** in the world
- India aims to achieve a **target of producing 22 million metric tonnes** of fish by 2024-25.

GS3

Economy

WTO'S NEW AGREEMENT ON FISHERIES SUBSIDIES

Context:

Switzerland has become the **first WTO member** to formally submit its acceptance of the **WTO's new Agreement on Fisheries Subsidies**.

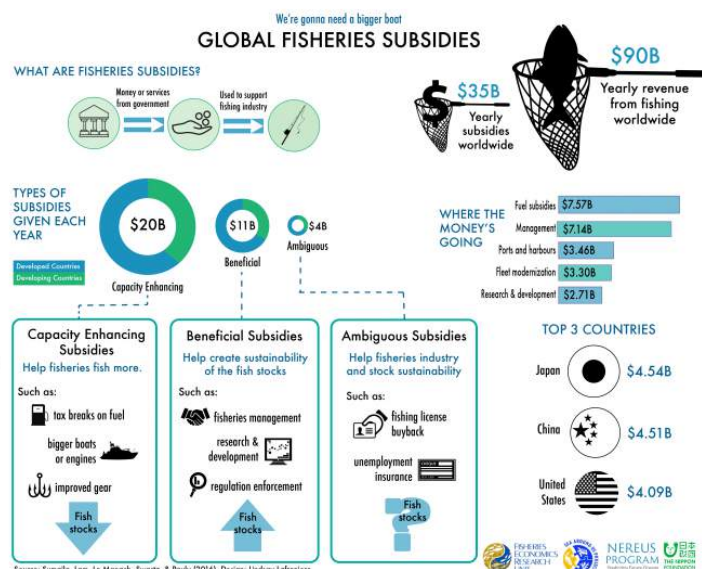
- **Acceptance of 2/3rd of WTO members** is needed for the agreement to come into effect
- **The Agreement was adopted at WTO's conference** in Geneva (2022)
- **It is the 1st WTO agreement** (for the environment) and the **2nd agreement reached at WTO** since its inception.

Benefits:

It will check large-scale IUU fishing which deprives coastal countries like India of fisheries resources, thereby significantly impacting the livelihoods of our fishing communities.

Indian government initiatives:

Five major Fishing Harbours (Kochi, Chennai, Visakhapatnam, Paradip, Petuaghat) developed; Seaweed Park (Tamil Nadu); Pradhan Mantri Matsya Sampada Yojana; Palk Bay Scheme; Marine Fisheries Bill, 2021.



SEBI'S INFORMATION DATABASE ON MUNICIPAL BONDS

Context:

Markets regulator Sebi has launched an information database on municipal bonds.

Objective:

Raise awareness of people; Efforts to develop the bond markets and make the process easy and streamlined.

What is an information database?

The information database contains a wide range of information in the form of statistics and regulations, circulars, guidance notes and Frequently Asked Questions issued by Sebi in respect of municipal debt securities.

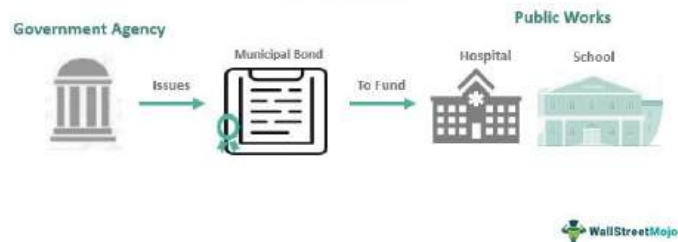
What are Municipal Bonds?

Municipal bonds (or Muni bonds) are debt securities issued by states, cities, counties and other governmental entities to fund day-to-day obligations and to finance capital projects such as building schools, highways or sewer systems.

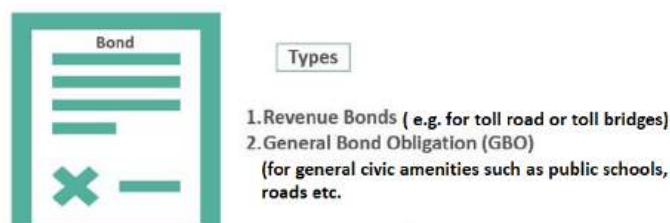
Bengaluru floated the 1st Municipal bond in 1997

Municipal Bond

Municipal bond is a fixed-income debt security issued by a governmental entity to fund public projects, like construction of roads or sewer systems.



Municipal Bond



NATIONAL ASSET RECONSTRUCTION COMPANY

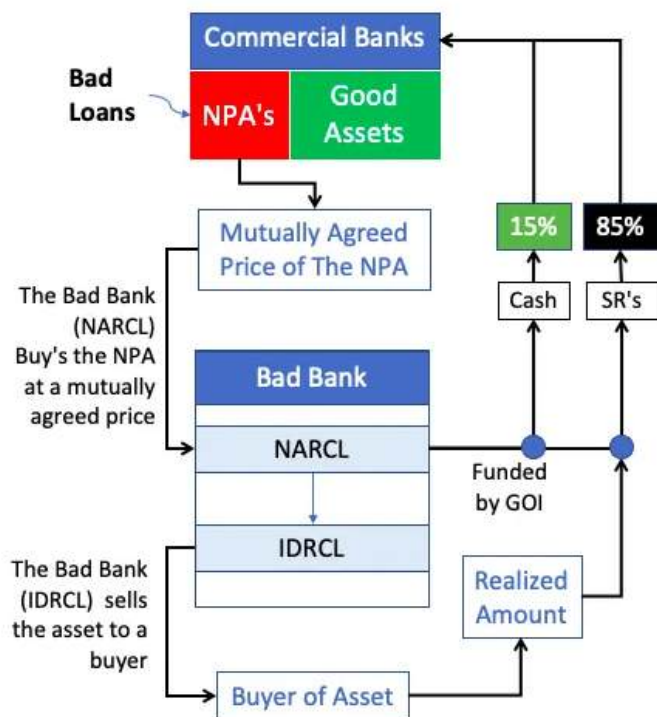
Context:

The National Asset Reconstruction Company Ltd (NARCL) has acquired its first stressed asset — **Jaypee Infra-tech** — from lenders led by IDBI Bank.

- NARCL will acquire assets on a **15:85 ratio of cash and security receipts (SRs)**.
- SRs, which are issued in favour of the transferring lenders, are **secured by a government guarantee for their face value**.

About NARCL:

- NARCL/ bad bank Asset Reconstruction Company (ARC) is a specialized financial institution that buys **Non-Performing Assets (NPAs) from banks and financial institutions** so that they can clean up their balance sheets.
- This helps banks to **concentrate on normal banking activities**.
- The asset reconstruction companies or ARCs are **registered under the RBI**.
- It was announced in the **Budget for 2021-22**.
- The plan is to create a **bad bank to house bad loans of ₹500 crores and above**.



AGRI COMMODITY TRADE

Context:

The farmer's union, Shetkari Sanghatana, launched a protest over the Securities and Exchange Board of India's (SEBI) decision to keep the trading of derivatives in seven agricultural commodities suspended.

Background:

- In 2021, the capital markets regulator suspended futures trading in seven commodities, viz., wheat, paddy (non-basmati), moong, chana, etc., on the exchanges, in an effort to **reduce food inflation**.
- The ban was intended to stop speculative trade in these commodities.

How does the derivatives trade in commodities work?

- Agricultural commodities like cotton, paddy, soybean, soya oil, mustard seed, etc., are traded on the National Commodities and Derivatives Exchange (**NCDEX**) and the Multi Commodity Exchange (**MCX**).
- Derivatives** are short-term financial contracts that are bought and sold in the market.
- Profits are made **by predicting price move-**

ments of the asset that underlies the contract.

- The derivatives trade can be in **futures and options**. In a **futures contract**, a supplier pledges to sell a certain quantity at a fixed price at a future date.
- Also, farmers can put fixed amounts of their produce, which fits the quality standards of the exchange, to be sold at a fixed price - **almost like price insurance**.
- Both contracts can be terminated by either the producer or the trader by paying a margin price to the exchange.

Characteristics	Commodity Exchange	Stock Exchange
Definition	Refers to an organized market for the buying and selling of enforceable contracts to deliver commodities at a future date	Refers to a marketplace where securities such as stocks and bonds are bought and sold.
Products	Deals with future contracts of commodities	Deals with shares and other securities such as bonds
Ownership status	No ownership status achieved	The investor owns shares of a company
Investment Duration	Mainly short-term	Usually long-term
Risk	Highly risky due to the high volatility of	Less risky due to stability and less volatility of

INDIA STACK'S DIGITAL PUBLIC GOODS

Context:

As many as seven countries will sign up with India to use **India Stack's digital public goods**

- Non-resident Indians** will also be able to use **UPI** in Singapore, Australia, Canada, Hong Kong, Oman, Qatar, the US, Saudi Arabia, UAE and the UK.
- The government will **not charge any fee** for offering the technology platform

Technology on offer by the Indian government:

- **Digi Locker** is a secure cloud-based platform for the storage, sharing and verification of documents and certificates.
- **Modular Open-Source Identity Platform (MO-SIP)**: developed by the International Institute of Information Technology Bangalore
- **Instant real-time payments system** Unified Payments Interface (UPI)
- Covid vaccination platform **CoWIN** and Health Stack.

What are Digital Public Goods?

Digital public goods are **public goods in the form of software, data sets, AI models, standards or content** that are generally free works and contribute to economic digital development.

E.g., **Aadhaar, UPI or Free and open-source software (FOSS)** are an example of digital public good

Digital technologies: electronic tools, systems, devices and resources that generate, store or process data.

Digital Public Goods

Public Goods: a commodity or service that is provided without profit to all members of a society, either by the government or a private individual or organisation which is to the benefit or well-being of the public.

Benefits: Adoption of India technology stack like unique identifier technology, digital payments and Co-Win will help foreign countries save billions, boost educational access and expedite their digitization process

- It is expected to **help Indian start-ups and system integrators** in engaging with foreign countries

What is India Tech Stack?

India Stack comprises **open-source software application programming interfaces (APIs)** of government-backed services. The **open-source model** has a plethora of computer languages, architecture, libraries, and user interfaces.

	What is it?	What is in it?	Who is the owner?
Consent layer	A modern privacy data sharing framework	Open personal data store	Reserve Bank of India
Cashless layer	An electronic interoperable payment network	IMPS, AEPs, APB, UPI	National Payments Corporation of India
Paperless layer	Easily store and retrieve information digitally	Aadhaar e-KYC, e-Sign, Digital Locker	Department of Electronics and Information Technology
Presence-less layer	Unique digital biometric identity with open API access	Aadhaar card, Mobile Aadhaar	Unique Identification Authority of India

Related News:

The Ministry of Finance has recently set up a G20 task force on Digital Public Infrastructure (DPI) to create a detailed map of India's DPI across sectors

SHORT SELLING

Context:

Hindenburg Research, which has accused the Adani Group of fraud, is a short seller.

What is Short-Selling?

Short selling, or shorting, is a trading strategy based on the expectation that the **price of the security will fall**. While fundamentally it is based on the **"buy low, sell high"** approach, the sequence of transactions is reversed in short selling — to **sell high first and buy low later**. Also, in short selling, the trader usually does not own the securities he sells, but merely borrows them.

- **Traders in the US use short selling as speculation**, and investors or portfolio managers could use it as a hedge against the downside risk of a particular stock.

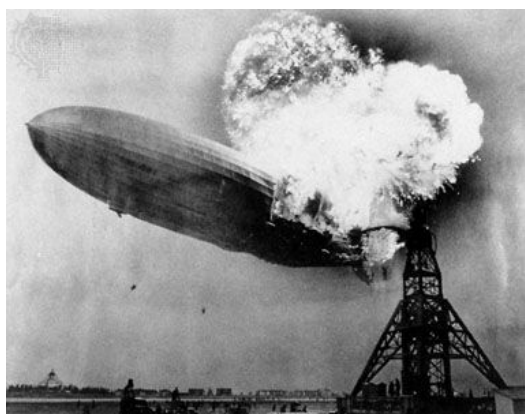


S. No	Advantages	Disadvantages
1	Generates profits when markets fall	Returns are limited, particularly with downward locks placed in stock markets.
2	Helps to hedge a portfolio against risks of market falls	Can generate panic and push a trend towards market crashes.
3	Allow potential to earn money on low capital outlay	Short sellers lose out on dividends
4	Allow potential to earn money on low capital outlay	If stocks with short positions rise, investors will have to buy the shares to pay back the lender.

Related News:

Name: Hindenburg

Zeppelin Airship disaster: In 1937, a German passenger airship called **Hindenburg** caught fire while attempting to dock onto its mooring mast in New Jersey, United States. The disaster led to the demise of the airship era.



MEGA PROJECTS FOR ANDAMAN AND NICOBAR

Context:

The representation of nearly **100 former civil servants** wrote to **President Droupadi Murmu** against development plans on **Great Nicobar Island**.

- In other news, SC panel questions need to **revive oil palm plantations** in Andamans.

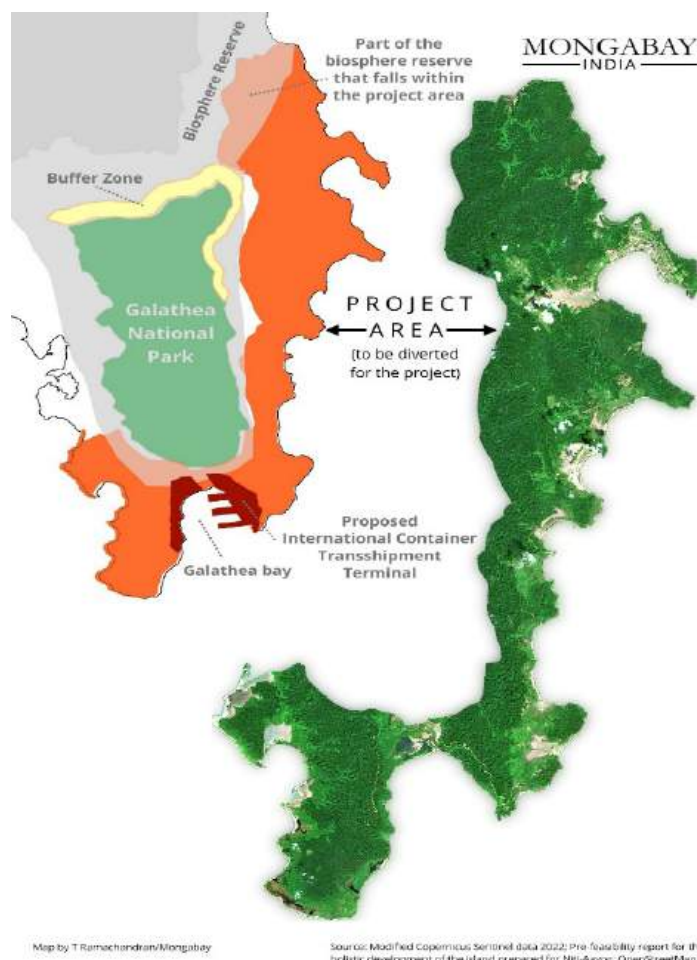
About the Great Nicobar Project

Ministry of Environment, Forest and Climate Change (MoEFCC) last year (November 2022) granted an **in-principal clearance** for the diversion of **130 sq km of forest** in Great Nicobar Island for the mega project.

- The project includes a **transshipment port, an airport, a power plant** and a greenfield township.
- Implemented by **Andaman and Nicobar Islands Integrated Development Corporation** under a vision plan conceived by the NITI Aayog.
- It includes **compensatory afforestation** on “non-notified forest land” in Haryana.

• About the ecology of A&N:

A&N has India's **largest mangroves** and that **over half the species** of butterflies, **40% of birds** and **60% of mammals** are endemic to the region. The project is likely catastrophic for the **island's sensitive ecology** and **indigenous hunter-gatherer tribes** like the **Shompen** who are already listed as a '**particularly vulnerable tribal group**'.



Map by T Ramachandran/Mongabay

Source: Modified Copernicus Sentinel data 2022; Pre-feasibility report for the holistic development of the island prepared for NITI-Aayog, OpenStreetMap

Related news:

SC panel questions need to revive oil palm plantations in Andamans

Supreme Court-constituted Central Empowered Committee (CEC) has questioned the **need to revive oil palm plantations** in Andamans as a similar move in the past has proven to be a total commercial failure.

- **National Mission on Edible Oils (Oil Palm)** (launched in 2021-22) with a special focus on North Eastern States and Andaman & Nicobar.
- Over 90% of India's Palm oil cultivation is situated in the state of Andhra Pradesh and Telangana.
- Oil palm is a **native of West Africa**.

KASHMIR'S PASHMINA SHAWLS

Context:

It is a fabric that is adored and respected all around the world as pashmina or cashmere.

Background: The French empress **Josephine**, who was given a Kashmiri Kani shawl by her husband, Emperor **Napoleon**, in the 18th century, was instrumental in reviving a dying craft in Kashmir by popularizing it in Europe.



Pashmina:

- The term 'Pashmina' has been derived from the Persian word "Pashm" meaning **wool**.
- It is a **GI-certified wool** that has its origin in the **Kashmir** region of India.
- Due to the high quality of the wool used and the labour-intensive process required to make each individual piece, pashmina shawls are **quite expensive**.
- **The Changthangi goats** (*Capra Hircus*), domesticated in Ladakh, are the source of the wool used to weave Pashmina Shawls.
- The **Changpa tribes** of Ladakh who herd the Changthangi goats harvest the raw Pashm.

Shahtoosh: It is the name given to the wool of the Tibetan chiru (Endangered in the IUCN Red List) antelopes.



WORLD ECONOMIC SITUATION AND PROSPECTUS 2023 REPORT

Context:

UNDESA (in partnership with UNCTAD and five regional UN commission) have produced this report.

Key observations:

- **The world economy was much affected** by COVID-19 lockdowns and the war in Ukraine in 2022
- World output growth will decelerate to **1.9% in 2023 (from 3% in 2022)**
- **On South Asia:** The economic outlook has "significantly deteriorated due to high food and energy prices, monetary tightening and fiscal vulnerabilities" with average GDP growth projected to moderate to **4.8% in 2023 from 5.6% in 2022**
- **On India:** Economic growth in India is projected to moderate in 2023, with higher interest rates weighing on investment and slower global growth weakening exports

It recommends Reprioritization of public expenditures esp. in education, health and digital infrastructure; more social protection,

About UNDESA

The United Nations Department of Economic and Social Affairs (UN DESA) (est. 1948; HQ: New York) is part of the UN Secretariat and assists countries around the world in **agenda-setting and decision-making** with the goal of meeting their economic, social and environmental challenges (including SDG Goals)

About UNCTAD

The United Nations Conference on Trade and Development (**est. 1964; HQ: Geneva, Switzerland**) is an inter-governmental organization within the United Nations Secretariat that promotes the interests of developing countries in world trade.

Science and Technology

NOROVIRUS

Context:

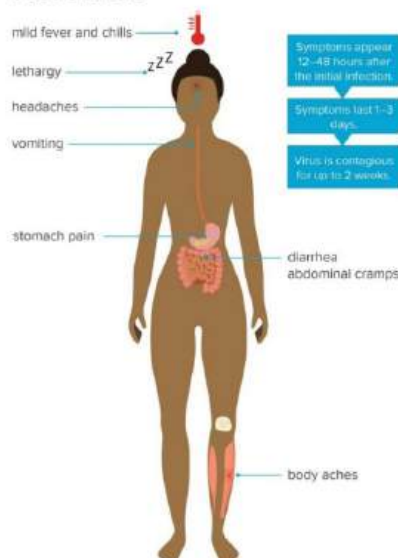
The Kerala Health Department confirmed two cases of norovirus.

About Norovirus:

- **Symptoms: Stomach and intestinal inflammation**, leading to symptoms such as **nausea, vomiting, diarrhoea, and stomach cramps**.
- **Mode of Transmission** – highly contagious, contact with an infected person, consuming contaminated food or water, or touching contaminated surfaces and then touching the mouth, through the air by tiny droplets when an infected person vomits.
- **The virus: Capable of surviving low temperatures**, common during the **winter and in colder countries**, hence referred to as “**winter vomiting disease**”.
- **The severity of infection: Estimated to kill 200,000 persons globally every year**, with most deaths occurring among those **below the age of five years and those over the age of 65 years**.
- **Vaccines: Not Available**
- **Prevention method: Practice good hygiene.**

MEDICALNEWS TODAY

Effects on the Body Norovirus



UKRAINE WAR: CERN HAS SHORTENED RUNS

Context:

In the wake of the energy crisis fuelled by the Russia-Ukraine war, the **particle physics laboratory CERN**, known for discovering the ‘god particle’ in 2012, has reduced its energy intake.

- The laboratory has **shortened the running period of its Large Hadron Collider (LHC)** by a month

What is LHC?

The **Large Hadron Collider** is a giant, complex machine built to study particles that are the smallest known building blocks of all things.

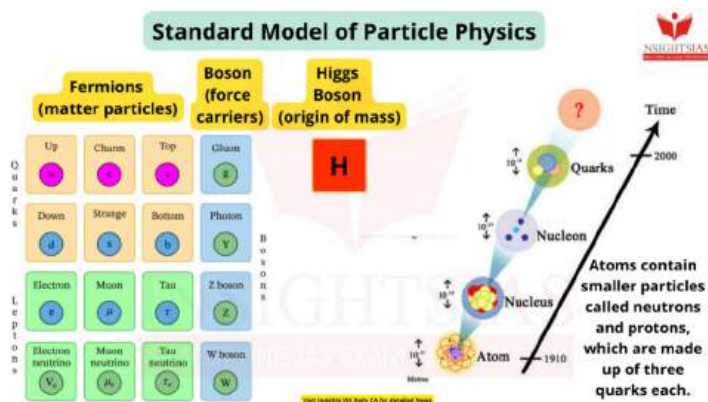
- **Structure:** LHC is a **27-km-long track-loop buried 100m underground** on the Swiss-French border.
- **Operation:** In its operational state, it fires **two beams of protons** almost at the speed of light in opposite directions inside a ring of superconducting electromagnets.

Achievements:

- **‘God Particle’ discovery:** In scientists at CERN announced the discovery of the Higgs boson or the ‘God Particle’ during the LHC’s first run.
 - This led to **Peter Higgs and his collaborator François Englert** being awarded

the Nobel Prize for physics in 2013.

- The Higgs boson is **the fundamental particle associated with the Higgs field**, a field that gives mass to other fundamental particles such as electrons and quarks.
- 'New Physics' beyond Standard Model:** After the discovery of the Higgs boson, scientists have started using the data collected as a tool to look beyond the **Standard Model**, which is currently the best theory of the most elementary building blocks of the universe and their interactions.



Prelims Links

Q. The efforts to detect the existence of Higgs boson particles have become frequent news in the recent past. What is/are the importance (s) of discovering this particle? (UPSC CSE 2013)

- It will enable us to understand as to why elementary particles have mass.
- It will enable us in the near future to develop the technology of transferring matter from one point to another without traversing the physical space between them.
- It will enable us to create better fuels for nuclear fission.

Select the correct answer using the codes given below.

- 1 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

Answer: A

Higgs boson is related to particle physics.

Statements 2 and 3 are incorrect: No such evidence has been found.

NITRIDE SEMICONDUCTORS

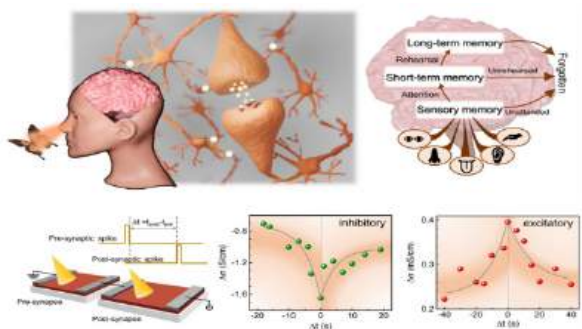
Context:

Scientists from the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) have used **scandium nitride (ScN)** and **Complementary Metal-Oxide-Semiconductor (CMOS)** compatibility to develop **brain-like computing**.

This invention can provide a **new material for stable, CMOS-compatible optoelectronic synaptic functionalities** at a relatively **lower energy cost** and hence has the potential to be translated into an industrial product.

How it works:

- The human brain is a supreme biological computer that is smaller and more efficient due to the presence of a **synapse (the connection between two neurons)** that plays the role of both processor and memory storage unit. In the current era of **artificial intelligence**, the **brain-like computing approach** can help meet the escalating computational demands.
- Scientists used **ScN** to develop a **device mimicking a synapse** that controls the signal transmission as well as remembers the signal.
- An artificial optoelectronic synapse with **ScN** thin films that can mimic synaptic functionalities like **short-term memory, long-term memory, the transition from short-term to long-term memory, learning-forgetting, frequency selective optical filtering, frequency-dependent potentiation and depression, Hebbian learning, and logic-gate operations**.
- It can act as a platform for both **excitatory and inhibitory functions**. The industrial processing techniques of **ScN** are similar to the existing semiconductor fabrication infrastructure. Response to the **optical stimuli** also has the **advantage of possible integration with photonic circuits** known for higher speed and broader bandwidth than electronic circuits.



Technology

CAN INDIA'S BHAROS REPLACE ANDROID, IOS?

Context: Developed by an IIT Madras-incubated start-up, **BharOS** is being pitched as India's answer to the **Google-owned Android** and **Apple's iOS**, the two most dominant mobile operating systems in the world.

What is BharOS? How was it made?

- BharOS is an **Android Open-Source Project** and was developed by **JandK Operations Private Limited**, a non-profit organisation incubated at **IIT Madras**.
- Concerns existed with respect to the **collection, storage, and usage of data** that is generated by Indian smartphone users. **BharOS** tries to address these issues.

How is BharOS different from Android?

- BharOS uses **AOSP or Android Open -Source Project**, the functionalities and the methodologies both OS use are essentially the same.
- **What sets BharOS apart from Android, is that it is free from Google Services and Apps.** It comes with **no default app (NDA)**, which allows users to have more control over permissions that an app can have.
- Google has used its preinstalled apps and services to collect data, sometimes without explicitly asking a user. Similarly, other apps from Google's PlayStore share data with third-party services. **BharOS does not come with any such preinstalled services or apps, and hence, is deemed to be more secure.**
- It also comes with a **native over-the-air update (NOTA) feature** that keeps the devices safe and with organisation-specific **Private App Store Services (PASS)**, the device gives access to only those apps which have been thoroughly verified by the organization.

How will apps work on BharOS?

- It will let users choose what **apps they want to use for their own devices.**
- Furthermore, it will have its **own app store which will allow users to download and install apps**, eliminating the need for the Google App Store.
- Users may be allowed to sideload apps in a much easier manner than Android allows.
- Barring a few essential apps, **BharOS may favour indigenously developed apps or apps that have been designed with a particular focus on India and Indian users.**
- The indigenously-built BharOS paves the way for **Atmanirbhar Bharat** & could help put a check on Big Tech and the duopoly of Google-Apple in the mobile ecosystem.

RAILWAYS' AI-BASED PROJECT

Context:

The Indian Railways has concluded the trial of an **Artificial Intelligence (AI) program** built to fix a perennial issue — **long waiting lists for tickets.**

How it will work:

- Made by Railways' in-house software arm **Centre for Railway Information Systems (CRIS)**, this AI module, called **Ideal Train Profile**, was fed with information like **how millions of passengers booked tickets on these trains, which origin-destination pairs were a hit and which were flops at what time of the year, which seats remained vacant for what portion of a journey, etc.**
- The AI does data-driven **remote location selection, completely automates the process of quota distribution, and suggests optimal quotas** for different ticket combinations based on historical demand.

Health

IMMUNE IMPRINTING

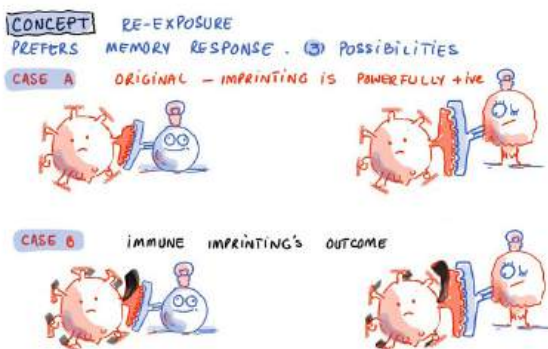
Context:

Immune imprinting in the bodies, might be **making new boosters far less effective than expected.**

- Two papers, published in the **New England Journal of Medicine (NEJM)**, pointed out that **bivalent boosters** — made to counter both the Omicron strains and the original Covid-19 strain — **don't generate significantly greater antibody responses than an additional dose of the original mRNA vaccines.**

What is immune imprinting?

- Immune imprinting is a tendency of the body to repeat its immune response based on the first variant it encountered — through infection or vaccination — when it comes across a newer or slightly different variant of the same pathogen.
- Imprinting acts as a database for the immune system, helping it put up a better response to repeat infections.
- After the body is exposed to a virus for the first time, it produces memory B cells that circulate in the bloodstream and quickly produce antibodies whenever the same strain of the virus infects again.
- The problem occurs when a similar, not identical, variant of the virus is encountered by the body. In such cases, the immune system, rather than generating new B cells, activates memory B cells, which produce cross-reactive antibodies that bind to features found in both the old and new strains. These cross-reactive antibodies offer some protection but are not as effective as the ones produced by B cells when the body first encountered the original virus.



How to circumvent immune imprinting?

- Nasal vaccines might be better at preventing infections than injected ones:** since mucous membranes would create stronger protection, despite carrying some imprint of the past.
- Spacing out coronavirus vaccine shots on an**

annual basis.

POLYCYSTIC OVARIAN SYNDROME (PCOS)

Context:

The Indian Journal of Biochemistry and Biophysics (IJB), CSIR-National Institute of Science Communication and Policy Research (NIScPR), has brought out a special issue on the theme, “**Polycystic Ovarian Syndrome (PCOS) and its Complications**”.

About PCOS:

- Polycystic ovarian syndrome (PCOS) is a multifactorial endocrine disorder**, which is characterized by chronic anovulation.
- Irregular periods, hirsutism, and weight gain are the common symptoms of PCOS.**
- It is the pre-eminent cause of infertility, with a **worldwide range of 6-26%, and in India, it is 3.7-22.5%.**
- Risk factors: **genetics, neuroendocrine system, sedentary lifestyle, diet, and obesity.**

Treatment:

- Combination of lifestyle changes and medication.** Lifestyle changes such as **weight loss, regular exercise, and a healthy diet can help regulate hormones and reduce symptoms.**
- Medications such as birth control pills, **metformin, and clomiphene** can be used to regulate the **menstrual cycle, reduce androgen levels, and improve ovulation.**

PCOS SYMPTOMS



POLYCYSTIC OVARY SYNDROMES (PCOS)

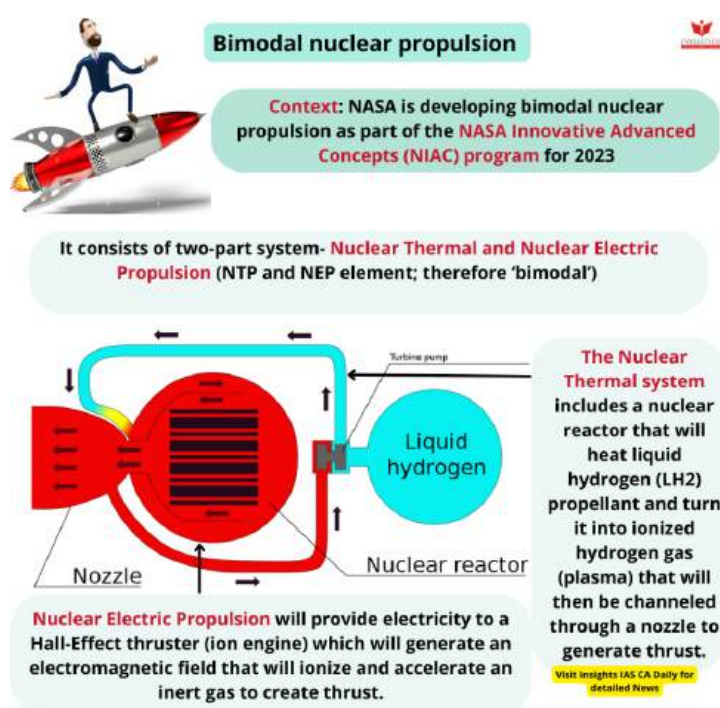
Space

NASA'S NUCLEAR ROCKET PLAN

Context:

NASA is developing **bimodal nuclear propulsion** – a two-part system consisting of Nuclear Thermal and Nuclear Electric Propulsion (NTP and NEP element; therefore 'bimodal') – that could enable transits to **Mars in just 45 days**

- The bimodal nuclear propulsion system uses a "wave rotor topping cycle"



Advantages over conventional chemical propulsion: fuel efficiency, a higher specific impulse (Isp) rating and unlimited energy density (virtually).

ISRO's programme:

- Indian Space Research Organization started with the three-phase development of a **100-Watt Radioisotope Thermoelectric Generator (RTG)**
- RTGs were first used in space during the **Cold War in 1961** for the US's Transit-4A Mission.

'GREEN COMET' AFTER 50,000 YEARS

Context:

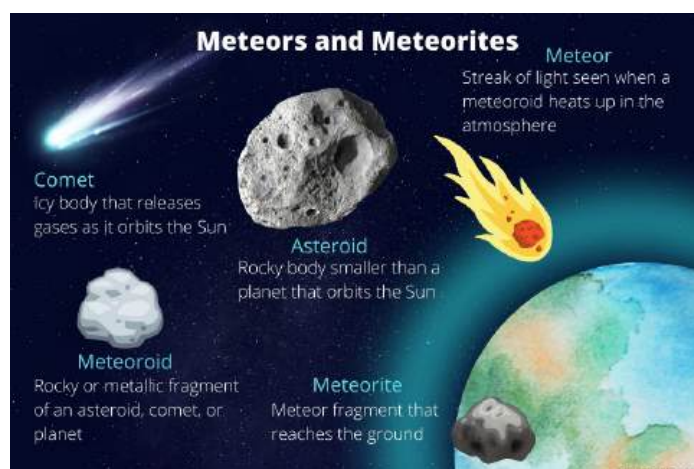
A green comet is estimated to come closest to Earth, termed the **C/2022 E3 (ZTF)**, the comet was named to refer to those who first spotted it – **astronomers using the wide-field survey camera at the Zwicky Transient Facility (ZTF) in the US.**

The Green Comet:

- Orbits sun in 50,000 years
- The comet comes from the **Oort cloud**
- It gets its beautiful green glow from **diatomic carbon** (pairs of carbon atoms that are bound together) that is present in the comet's head.
- When **the ultraviolet rays of solar radiation** fall on the comet, these molecules emit green light.
- Comet C/2022 E3 is **visible in the northern hemisphere** and as the sky gets darkens in the evening, it can be seen below and left to the Plough constellation handle.

About comets:

- Comets are **frozen rocky or gas-filled objects that are remnants of the formation of the solar system.**
- Due to their composition, characteristics, and the path they move in, they tend to leave a **light "behind them".**



Oort Cloud:

- The Oort Cloud is a **predicted collection of icy objects that surrounds the sun at a distance of**

about one light-year.

- The existence of the Oort cloud has not been directly observed, but it is thought to be the source of long period comets that have been observed entering the inner solar system.

ADITYA L1

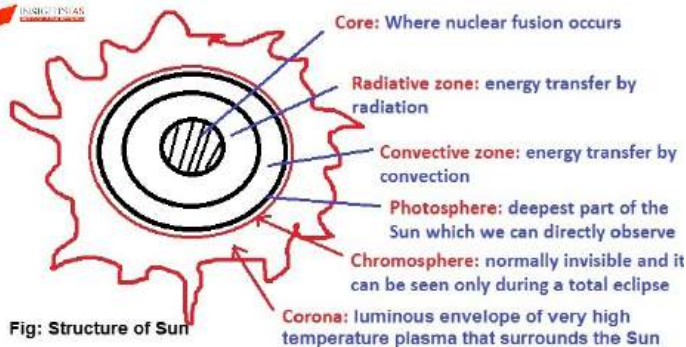
Context:

The Aditya-L1 mission will be launched by ISRO to the L1 orbit (which is the first Lagrangian point of the Sun-Earth system)

- Aditya-L1 is the first Indian space mission to observe the Sun and the solar corona
- L1 orbit allows** Aditya-L1 to look at the Sun continuously
- It will be launched aboard a **PSLV-XL launch vehicle**

The objective of the mission:

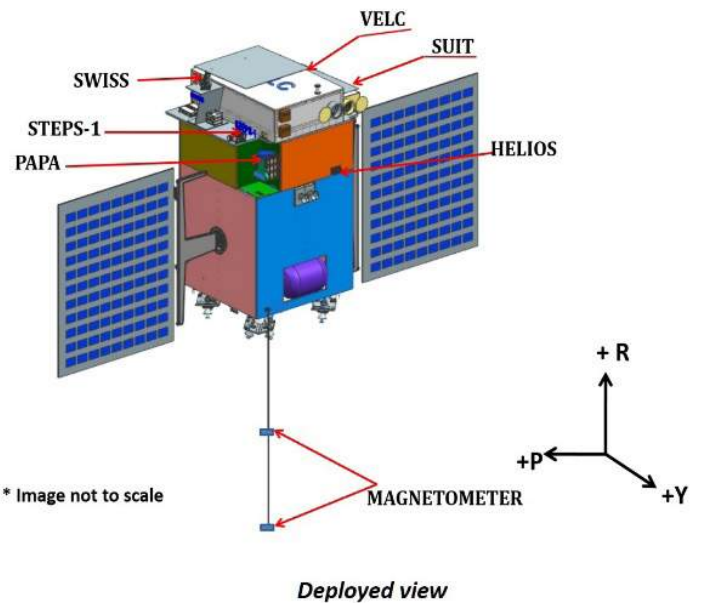
To study solar upper **atmospheric (chromosphere and corona) dynamics** and understand the physics of the solar corona and its heating mechanism.



Payloads:

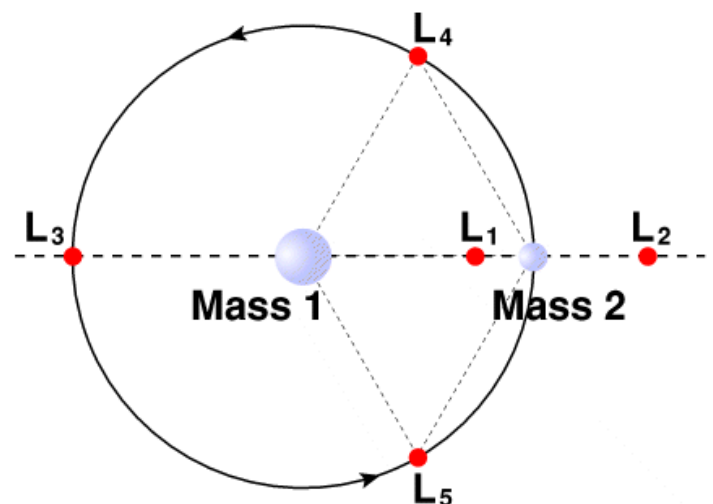
Aditya-L1 has seven payloads in total, of which the primary payload is the **Visible Emission Line Coronagraph (VELC)**.

- VELC is a solar coronagraph capable of simultaneous **imaging, spectroscopy and spectro-polarimetry**
- Significance:** No other solar coronagraph in space has the ability to image the solar corona as close to the solar disk as VELC can. It can image it as close to 1.05 times the solar radius.



About Lagrange points:

The Lagrange points are points of equilibrium for small-mass objects under the influence of two massive orbiting bodies. At Lagrange points, the **gravitational pull of two large masses precisely equals the centripetal force** required for a small object to move with them. These points in space can be used by spacecraft to reduce fuel consumption needed to remain in position.



Environment

BHOPAL RAMSAR WETLAND

Context:

The National Green Tribunal has directed the **Central Pollution Control Board (CPCB)** and **Madhya Pradesh Pollution Control Board (MPPCB)** to periodically monitor the activities of a cruise vessel polluting the Bhoj wetland in Bhopal, MP.

About the issue:

The State government allowed **cruises of capacity 50 passengers (2011)** and plans to launch higher-capacity cruises in 2023. However, cruise vessels have been known to cause pollution in the lake and are in clear violation of EPA, 1986, and the state government's own notification of 2022 ("only non-motorized boats are permitted")

About Bhoj Wetland:

The wetland (man-made) is also a **Ramsar site with international importance** and has two lakes, Upper Lake, also called Bhojtal and Lower Lake or Chhota Talaab.

- It provides drinking water to over **1 million people**

About CPCB:

The Central Pollution Control Board of India is a **statutory** organization under the **Ministry of Environment, Forest and Climate Change**. It was established in 1974 under the **Water Act, 1974**. The CPCB is also entrusted with the powers and functions under the **Air Act, 1981**

About NGT:

The National Green Tribunal (under the Ministry of Law and Justice) is a statutory body made in the year 2010 to deal with environmental cases and the speedy implementation of decisions relating to them.

Related News:

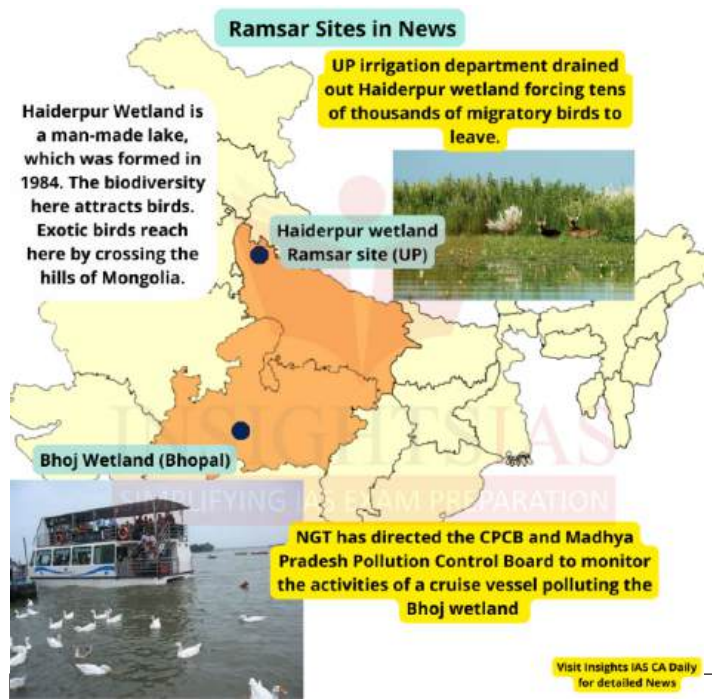
Experts slam move to dewater Haiderpur wetland

Context: The Uttar Pradesh irrigation department drained out **Haiderpur wetland, a protected Ramsar site** that some believe to be the best upland in North India, forcing tens of thousands of migratory birds to leave the most prominent bird site in western Uttar Pradesh.

Reason for draining water out: This was done under pressure from farmers who complained of **water logging in their fields** due to high groundwater levels.

About Haiderpur Wetland

Haiderpur Wetland is spread over an area of about 7000 hectares on the **Muzaffarnagar-Bijnor border** between the **Ganges and the Solani River**. It is a part of **Hastinapur Wildlife Sanctuary**.



SANKHYA SAGAR WETLAND

Context:

- An artificial lake in MP- **Sankhya Sagar**, has virtually disappeared under a thick layer of an invasive aquatic plant (hyacinth), threatening the biodiversity of the water body.
- Sankhya Sagar - a **Ramsar site** (declared in 2022), is a wetland site designated internationally important by **UNESCO**.

About the lake and the invasive species:

- The lake spreads across 248 hectares (612.82 acres) and helps maintain the ecological balance of the **Madhav National Park**.
- The lake is home to marsh crocodile aka 'Mugger' (*Crocodylus palustris*), which is a **Schedule I** reptilian species protected under the Indian Wildlife (Protection) Act, 1972.
- **Water hyacinth** (*Pontederia crassipes*) is an invasive plant species (macrophytes) native to South Africa.
- Although the plant has some uses (**acts as a water purifier** by removing heavy metals), it poses a threat to aquatic biodiversity when it covers the entire surface of a water body.

Ramsar convention/The Convention on Wetlands of International Importance:

- It is an **international treaty** for the conservation and wise use of wetlands.
- It is named after the **Iranian city of Ramsar** (on the Caspian Sea), where the treaty was signed on 2 February **1971**. It came into force in **1975**.
- India has **75 sites** (as of August 2022) recognised under the convention.

Montreux Record:

- Montreux Record under the Convention is a register of wetland sites where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.
- It is maintained as **part of the Ramsar List**.

METHANOL BLENDED DIESEL (MD15)

Context:

The government ceremonially inaugurated the **demo run of an Inland Water Vessel** powered by Methanol blended Diesel (MD15) (15% methanol blended HSD)

Benefits of blending gasoline with Methanol:

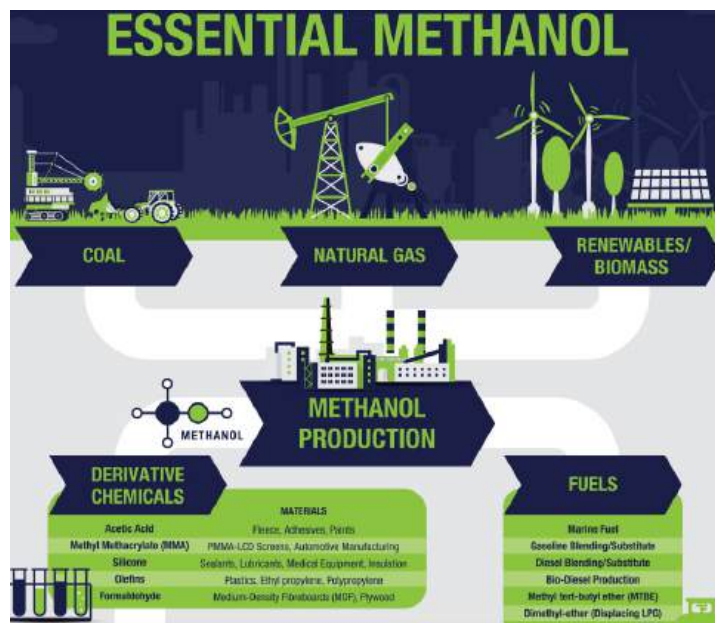
Blending 15% methanol in gasoline can result in **at least a 15% reduction** in the import of gasoline/crude oil. In addition, this would **bring down GHG emissions by 20%** in terms of particulate matter, NO_x, and SO_x, thereby improving urban air quality. It will also create nearly 5 million new jobs in the Methanol economy.

About Methanol Economy:

NITI Aayog's 'Methanol Economy' programme (launched in 2018) is aimed at reducing India's oil import bill, greenhouse gas (GHG) emissions, and **converting coal reserves and municipal solid waste into methanol**.

About Methanol:

Methanol is a **cost-effective alternative marine fuel**. It is less costly than other marine fuels and is economical in terms of developing the shoreside storage and bunkering infrastructure. It is also known as wood alcohol. Its properties are similar to ethanol. It is also used in products such as plastics, paints, and cosmetics.



About India Energy Week:

IEW 2023 is the **first major event under India's G20 Presidency**. It will be organized by the Ministry of Petroleum & Natural Gas.

- India Energy Week is the **only all-encompassing international energy event** supported at the highest level of the Indian government, with participation from all the Public Sector Undertakings (PSUs), and officially supported by the Federation of Indian Petroleum Industry (FIPI).

Other initiatives for Methanol-based economy: BIS has notified 20% DME in LPG; Road ministry has notified MD15, MD85 and MD100 blends; Asia's 1st canister-based methanol cooking fuel programme (by Assam Petrochemicals in 2018); Cola-to-Methanol plants (by BHEL, Thermax and IIT Delhi)

GENETICALLY ENGINEERED TREES

Context:

USA is debating whether to allow a **genetically engineered (GE) version** of the American chestnut tree (currently functionally extinct) to spread in the wild.

- The US has already developed and field tested the GE version, **known as Darling 58**, and is now awaiting clearance from government agencies to grow them in the wild.
- **The population of the American chestnut**, a deciduous tree native to North America, dwindled in the first half of the 20th century when a fungal blight, *Cryphonectria parasitica*, killed over

four billion trees.

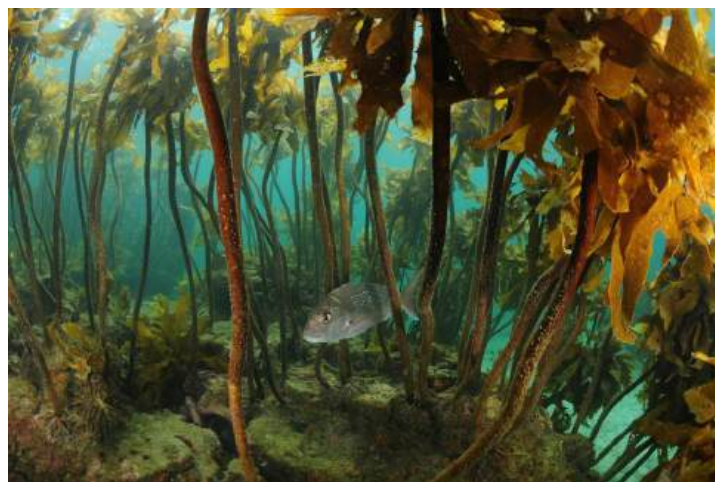
Initiatives by other countries for GE Trees:

- **China allows commercial plantation of GE Poplar Tree (insect-resistant)**
- **India experimenting with GE Rubber tree (extreme climatic stress-tolerant):** This is made possible by inserting **MnSOD gene** (manganese-containing Superoxide Dimutase)

What are GE Trees?

A genetically modified tree (GMt, GM tree, genetically engineered tree, GE tree or transgenic tree) is **a tree whose DNA has been modified using genetic engineering techniques**. It can help in fighting climate change by sequestering more carbon; boost biofuel production; help in growing more timber, pulp etc.

Concerns: GE Trees may contaminate other trees along with animals; not many scientific studies done on the long-term impact of GE trees



Findings of the study:

- Kelp populations at **equatorward-range edges** are **most vulnerable to climate change** as these locations are undergoing warming beyond **thermal tolerance thresholds**.
- The unique adaptive **genetic diversity** that the rear-edge populations (populations in warm, low-latitudes) may contain **is also under threat due to rapid warming**.

KELP FORESTS

Context:

- According to a new study, **Kelp forests** (large **brown algae seaweeds**) are declining because of climate change.

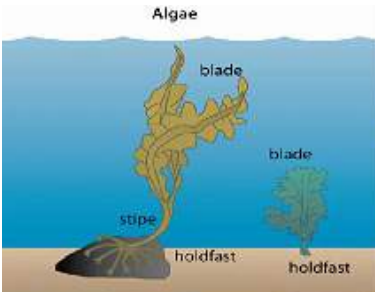
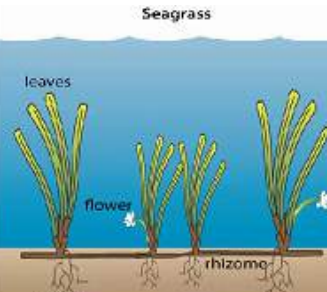
What is a Kelp Forest?

- They are **underwater** ecosystems formed in **shallow water** by the dense growth of several different species.
- **Kelp can also persist at lower latitudes**, aided by cool water upwelling or in deep-water refugia where they are protected by thermocline (*transition layer between the warmer surface water and the cooler deep water*).
- **Keystone Species:** They provide underwater **habitats to hundreds of species** and thus have great **ecological and economic value**.
- **Provide Ecosystem Services:** such as **coastal protection and carbon sequestration**.
- They also provide **recreational and tourism value** for scuba diving, snorkelling, and kayaking.
- Their loss will lead to a decline in the unique biodiversity that they support.

What is the thermal tolerance threshold?

The ability of an organism to withstand high temperatures after prior exposure to moderate temperatures. **For example, *Ecklonia radiata***, the dominant and most widely distributed Laminarian kelp in the southern hemisphere, rapidly succumb to warmer temperatures in spring and summer when temperatures exceed 27 degrees Celsius.

Way ahead: Kelp forests are incredibly important ecosystems that are worth protecting and preserving for their **ecological, economic, and social benefits**. To ensure that genetic diversity is protected, it is essential to identify refuge areas, which are places that support a lone or extinct population of a once more common species.

	Algae	Seagrass
		
DEFINITION	Seaweed is a macroalgae	Seagrass is a marine flowering plant
KINGDOM	Kingdom Protista	Kingdom Plantae
VASCULAR TISSUE	Seaweed is a non-vascular alga	Seagrass is a vascular plant
TRUE STEM, ROOT AND LEAVES	Lacks true stem, roots and leaves	Has a true stem, roots and leaves
FLOWERS	Seaweed does not produce flowers	Seagrass produces flowers
SEEDS	Seaweed does not produce seeds	Seagrass produces seeds
FRUITS	No fruits	Produces fruits

InstaCurious: Kelp forests are often referred to as “underwater rainforests” because of their high biodiversity and productivity.

Species in News

MAHABALI FROG WAITING FOR OFFICIAL RECOGNITION

Context:

Mahabali Frog, which buries itself all through the year and surfaces only one day to lay eggs, is waiting to be elevated as the **State Frog of Kerala**

Mahabali frog

Context: Mahabali Frog, which buries itself all through the year and surfaces only one day to lay eggs, is waiting to be elevated as the **State Frog of Kerala**

Mahabali Frog (*Nasikabatrachus sahyadrensis*) also known as **Purple Frog** is one of the **rarest frog species** endemic to the Western Ghats.

IUCN Status: **Endangered**

Name: The frog (*Nasikabatrachus sahyadrensis*) was named after the **mythical King Mahabali**, who visits his people once a year from the underneath world



Significance of naming it as state frog of Kerala:

- The purple frog has been acknowledged by **bio-geographers** all over the world as one of the rarest kinds and a “once in a century find”
- The declaration will go a long way in **projecting Kerala as the ambassador of conservation of amphibians** and its habitats
- The conservation of Mahabali Frog will also help in **conserving the aquatic ecosystems** in the Western Ghats

Importance of Amphibians:

- Amphibians are considered as **nature's best insect and pest control agents**, but are largely neglected when it comes to conservation
- They eat **insect pests** which is a **benefit to agriculture** and help control mosquitos which benefits human health.
- Their moist, permeable skin makes amphibians vulnerable to drought and toxic substances, so they are **exceptional indicators of ecosystem health**.

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MASS MORTALITY OF OLIVE RIDLEY TURTLES

Context:

Hundreds of **vulnerable Olive Ridley Turtles** (*Lepidochelys olivacea*) have washed ashore along the coastline between **Kakinada and Antarvedi** in the Godavari region during the ongoing annual breeding season on the east coast.

Reasons stated:

- The effluents are released from the **aqua ponds** along the coastline.
- The discharges from the pipelines of the on-shore oil exploration facilities

About Olive Ridley Turtles:

- They are the **smallest and most abundant** of all **sea turtles** found in the world.
- They get their **name** from their **olive-coloured carapace**.
- Known for **Arribada** (Mass Nesting)

Protection Status:

- Wildlife Protection Act, 1972:** Scheduled 1
- IUCN Red List:** Vulnerable
- CITES** Appendix I

Distribution:

They are found in **warm waters of the Pacific, Atlantic and Indian oceans.**

In India, they are conserved in Bhitarkanika National Park, Odisha, Gahirmata Marine Sanctuary, Odisha and the Godavari region of Andhra Pradesh.



INS VAGIR

Context:

The Indian Navy commissioned the **fifth diesel-electric Kalvari-class submarine Vagir**. It is among the six submarines being built by the Mazagon Dock Shipbuilders Limited (MDL), Mumbai, in collaboration with the French M/s Naval Group under Project 75.

Specifications of Vagir:

- The latest submarine gets its name from the **erstwhile Vagir**, a submarine which served the Navy between 1973 and 2001.
- The construction of the **new Vagir** began in **2009** also known as **Sand Shark**.
- Vagir represents **stealth and fearlessness**, as it comes with features like an advanced acoustic absorption technique.

Kalvari-class background

- Kalvari-class submarines include other vessels such as the **INS Kalvari**, **INS Khanderi**, **INS Karanj**, **INS Vela** and **INS Vagsheer**.
- The design is based on the **Scorpene** class of submarines designed and developed by the French Naval Group formerly DCNS and the Spanish state-owned entity Navantia.
- They have **Diesel Electric** transmission systems.
- These are **attack submarines** or **'hunter-killer'** types i.e., they are designed to target and sink adversary naval vessels.

Defence

EXERCISE CYCLONE-I

Context:

The first-ever joint exercise between the special forces of the Indian Army and the Egyptian Army named "Exercise Cyclone-I" is in progress at Jaisalmer in Rajasthan since 14 January 2023.

In 2019, India held its **first-ever joint exercise with African countries**, Africa-India Field Training Exercise-2019 (AFINDEX-19), which saw participation by 17 African countries.

How does a Submarine work?

A submarine is a type of ship that can travel both above and below the surface of the sea.

Types of submarines

Submarines can either be **diesel-electric** or **nuclear-powered**, both types can carry nuclear warheads. Here's how they differ.



The displaced water causes an upward force called **buoyancy**. Buoyancy acts in the opposite direction to gravity, which would pull the ship down.

Military Exercise

- **AMPHEX (Kakinada in Andhra Pradesh):** It is a biennial tri-services amphibious exercise, focused on the joint training of elements of all three services in various facets of amphibious operations to enhance interoperability and synergy.
- **TROPEX-23:** It is a biennial (every two years) Theatre Level Operational Readiness Exercise (TROPEX), aimed at “validating and refining” the Navy’s concept of “operations” as well as to test overall combat capabilities
- **Tarkash 2023:** It is a counter Terrorism Exercise between India’s National Security Guard and US Special Operations Forces.

CONTENT FOR MAINS ENRICHMENT (ETHICS/ESSAY):

INITIATIVES BY CIVIL SERVANTS

Direction: We are giving the list of good initiatives taken by civil servants every day (state-wise). One need not remember all the names or their work. Choose the one which **connects with you** and note it down for using it as an example in Essay/ Ethics/ Governance Mains Questions.

Rohit Singh (Collector, Narsinghpur, MP)

Key work:

- Super Project Nidaan: Apka Prashasan Apke Aangan
- Delivery of govt. welfare schemes
- 20+ camps that addressed 14,000 applications



Sarveshwar Bhure (DM, Raipur, Chhattisgarh)

Related Story: A girl who came in class XII merit list told the collector, “I want to become a collector like you”. Dr S Bhure replied – “be a better collector than me”.

He enabled:

- Launch of project **Padhai Tuhar Dwar**
- **E-learning classes** with 8,000 teachers
- Conducting over **500,000 classes** for 20,000



Rajat Bansal (DC Bastar, Chhattisgarh)

Key work:

- ‘ThinkB’ is a Technological Hub for Innovation Network
- An **incubator mentoring 15 start-ups** that came up within a year



Quotes

"Information space is the 'single gravest threat to democracy, electoral integrity and social cohesion in many countries, and it's only becoming more severe'"

Usages: This can be used to introduce/Conclude Questions related to the impact of technology (misinformation) on democracy/elections/social cohesion.

Related news:

US-led Summit for Democracy is a virtual summit hosted by the United States *"to renew democracy at home and confront autocracies abroad"*. The first summit was held on December 2021. The second summit will be held virtually in March 2023.

Quotes:

"The basic structure of our Constitution, like a north star, guides and gives a certain direction to the interpreters and implementers of the Constitution when the path ahead is convoluted"-**Chief Justice of India Dr DY Chandrachud**

Basic structure Doctrine (origin: Kesavananda Bharati Case, 1973): It is a legal doctrine that the **constitution of a sovereign state has certain characteristics** that cannot be erased by its legislature.

- The doctrine is recognised in **India, Bangladesh, Malaysia, Pakistan, and Uganda**
- Different formulations of the basic structure doctrine have now emerged in **South Korea, Japan, certain Latin American countries and African countries** as well.

Usages: You may use this quote in a polity essay or Polity GS2 Mains Question as an introduction/Conclusion.

Quotes:

Pariksha Pe Charcha 2023: PM Modi

- **On technology de-addiction:** *"Use technology but don't let technology use you"*
 - Adopt **"digital fasting"** once a week
 - Create a **'no technology' zone** in their homes
 - Consider yourself **smarter** than the gadgets
- **On learning from criticism:** Criticism is an integral part of India's democracy and students should learn from it to avoid getting affected by negative comments.
- **On languages:** Knowing a different language helps you give a sense of familiarity to the other person

Society

CLOTHES BOX FOUNDATION (NGO): FASHION FASTING FOR A CAUSE

Globally, clothing emits **10%** of global greenhouse gas emissions.

The Clothes Box team is now propagating some easy steps to practice fashion-fasting, and slow down clothes buying:

- Wear your clothes for a **considerable period** if they fit.
- **Repair clothes.** Live the traditional Indian values, and **pass them to the next generation**
- **Say 'Yes' to repeating clothes.** There is no shame in wearing something you own 100 times.
- **Wait for 15 days to buy something** that you feel you need today. There is an 80% chance you may not buy it at all.
- **Support brands that support sustainable practices** and take care of the planet.
- Ask questions to your manufacturers about **how they are making what they are making**

BALLAD OF THE ROAD: PADMA AWARDEES

Context:

Padma Awards were conferred to people for years of quiet contribution in the field of social work, or for preserving endangered traditional arts of India. Here are some of the good examples which can be mentioned in the ethics answer.

- A **76-year-old retired Army doctor from Jabalpur** who has been treating the underprivileged for the last 50 years.
- A **79-year-old social worker from Andhra Pradesh's Kakinada**, who lost his wife and two children in the 1985 Air India Kanishka bombing and has since **dedicated his life to free medical treatment for others**.
- A **98-year-old self-sustained organic farmer from Sikkim** who began **practising traditional agriculture long before the state government**

launched its organic mission.

- A 54-year-old wood carver from a Gond tribal community in Chhattisgarh's Kanker has rehabilitated former Maoist cadres by teaching them the art.

Governance

DWARKA: HOW A DELHI DISTRICT STOPPED THE GROUND FROM SINKING

As India's Himalayan town of Joshimath has been sinking, Delhi's Dwarka district reduced its reliance on groundwater and reversed the trend of land subsidence.

A University of Cambridge report corroborated that the neighbourhood had subsided by around 3.5cm (1.4in) in 2014 alone. When groundwater is pumped out, the land above it sinks - and this leads to land subsidence.

Initiatives taken:

- Heavy fines were imposed on buildings still using borewells: By 2016, almost all housing societies had stopped using borewells
- Two local lakes (including a 200-year-old local reservoir named 'Naya Jhod') were rejuvenated
- Mandatory to irrigate public parks using only sewage and treated surface water
- Residents began harvesting rainwater to increase the water table in the area

Usages: This example can be used as a conclusion or innovative steps in Geography/Disaster Management Questions.

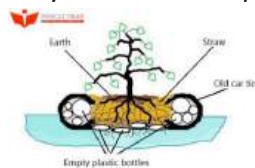
Environment

CHINAMPAS: FLOATING GARDENS MADE OF PLASTIC BOTTLES

In Singapore, a group of volunteers are encouraging people to turn plastic bottles into mini floating gardens, known as chinampas.

Origin: It was used as an ancient farming technique by the Aztecs (Mexico), who built artificial floating islands in lakes and found a way to grow plants and food on them.

Usage: This can be used as an innovative example to recycle and reuse plastic bottles.



HOW CAN YOU DO YOUR BIT TO FIGHT CLIMATE CHANGE?

Shrekanth RG and his startup team have over the last seven years, created more than 40 registered bio-enzyme brands, and helped scores of people launch their bio-enzyme products.

- Bio-enzyme has super-powerful cleaning and disinfectant-surfactant properties, which rival any commercial cleaner for effectiveness.
- Shrekanth is also the 'frugal living poster boy'. He holds workshops for communities on environmental-friendly living lifestyles and on bio-enzymes.

FIGHTING PLASTICS – '3B KA FUNDA' AND 'USEREUSABLES' MANTRA

- Ruchika Sethi Takkar's (Gurgaon) mantra is simple: whenever you step out of home, carry your own bag, box and bottle. The idea is to minimise the use of disposable bags and containers.



Health

CASE STUDY: CUBAN HEALTH-CARE

Context:

Recently, Cuban revolutionary Che Guevara's daughter Aleida visited India.

Success:

- **Life expectancy in Cuba** is higher than that of the US (72.5 vs. 71.9) (India's 70.19)
- Cuba has eliminated **polio, tuberculosis, typhoid fever, and diphtheria**
- **Malnutrition** incidence among (1-15 years old) is **0.7%** compared with 5% in the US
- Impressively **high ranking on major health indicators**, despite economic handicaps

How has Cuba developed one of the best healthcare systems?

- **Government-Run Healthcare:**
 - The Cuban government operates a **national health system**
 - The Cuban government has assumed **fiscal and administrative** responsibility for the health care of all its citizens.
 - **There are no private hospitals or clinics** as all health services are government-run.
 - It regards **accessibility to healthcare as a fundamental right** of its citizens.
- **Preventive Healthcare:**
 - Cuba's health policy emphasizes **prevention, primary care, services** in the community, and the active **participation** of citizens.
 - It offers the simplest check-up to the most complex surgery, free of charge
- **India's Connection:**
 - PM Modi's '**One Earth-One Health**' proposal is inspired by the global health philosophy of the late Cuban leader Castro.
 - **Cuba sends surplus physicians ("Army of white coats")** and health professionals abroad annually (including India): "Cuban doctors are always the first to arrive and the last to leave."

Quote on Healthcare: Dr Martin Luther King once remarked, "**Of the forms of injustice, inequality in healthcare is the most shocking and inhumane.**"

MEET VACCINATION SPECIALIST 'DR. HIFIVE' OF BENGALURU WHO HAS STRUCK THE RIGHT CHORD WITH KIDS

Context:

Dr. Sayed Mujahid Husain, has turned his clinic in Bengaluru into a fun and interactive space for children, engaging them in conversation or getting them to play with soft toys.

About Dr. HiFive:

- An internet sensation, Dr. Husain has 2.8 lakh followers on his Instagram account, **dr_hifive**. He hosts videos of him **vaccinating children on Instagram, drawing a great deal of appreciation.**
- At his **Goodwill Children's Clinic**, which he opened in 2012 after working in various hospitals, the pediatrician reads the child as he or she walks into his clinic and, based on the youngster's personality, **curates' techniques to strike a rapport.**
- Dr. Husain has had parents bring their **wards from nearby cities and towns for vaccination.**
- Such long travels for vaccination were unheard of earlier but are now part of the immunization experience for some.

KEYWORDS IN NEWS

Cultural superpower

- Refers to a country whose culture, arts, or entertainment have **worldwide appeal, significant international popularity**, or large influence on much of the world.

3Cs of Viksit Bharat (Developed India): Convergence, Collaboration, and Competition

Usage: The 3Cs are currently being used in **Aspirational**

Districts Programme in India:

- **Convergence** (of Central & State Schemes)
- **Collaboration** (of Central, State level '**Prabhari**' Officers, District Collectors and Gram Panchayat),
- **Competition** among districts through monthly delta ranking

AN EPISODE ON 'PEACE'

Direction: This can be used to start an essay or Ethics answer - to describe the keyword, Peace.

Once, a King offered a prize to the artist who would paint the best picture of peace. Many artists tried. The king looked at all the paintings and shortlisted two so that he could finally select one as the best painting. One picture showed a calm lake as a perfect mirror for the mountains all around it. Overhead was the blue sky with white clouds, beautifully reflected in the lake. Everyone thought that it was a perfect picture of peace. The other picture also had mountains, but those were rugged and bare. Above was a stormy sky from which rain fell and in which lightning played. Down the side of the mountain, a huge foaming waterfall releasing water with great force was also depicted. But behind the waterfall in a bush a bird had built a nest and was feeding her babies in perfect peace. Which painting do you think won the prize? The king chose the second picture. Do you know why? The King stated the reason, "Because peace does not mean the absence of noise, trouble, or disturbances. Peace means to be in the midst of all these and still remain calm in your heart." You can use this illustration.

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



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