

Current Affairs Update (Apr 1-7)

National

CERT-in may be exempted from RTI

The Indian Computer Emergency Response Team (CERT-in) may soon be exempt from responding to queries under the Right to Information (RTI) Act 2005.

The DoPT has reviewed a proposal from the MeitY **to include CERT-in in the 2nd Schedule to the RTI Act**, which deals with exempted organisations like the CBI and the BSF.

CERT-in: It is an office within the Union Ministry of Electronics and Information Technology (MeitY) established in **2004 under the IT Act 2000**. It is the nodal agency to

- To deal with cyber security threats.
- To strengthen the security-related defence of the Indian Internet domain.
- Coordinate with public and private organisations in India when cyber incidents like data breaches and ransomware attacks are reported.
- To issue advisories for software vulnerabilities as guidance for organisations.

FAME II subsidy for electric vehicles at only 52% of its target

The parliamentary standing committee on heavy industry highlighted **that Phase 2 of the FAME scheme to subsidize electric vehicles has achieved only 51.96 per cent of its target**. In related news, the **Committee on Estimates (2022-23)** for the evaluation of electric vehicle policy under the **Union Ministry of Heavy Industries** suggested an extension of the FAME II scheme.

Issues highlighted in the committee report

- **Massive dependence on oil imports and Internal Combustion Engine (ICE) vehicles causes air pollution and greenhouse gases.**
- **Slothy progress** in both physical and financial targets.
- **EV charging stations are sanctioned only for a few cities.**

Suggestions

- **Boost charging infrastructure.**
- The scheme should be extended further **with new targets, incentives, and measures.**
- Place greater **emphasis on implementation and extend the subsidy to private vehicles.**

Apex body for glacier management

A Parliamentary Standing Committee in India has recommended the establishment of an **overarching apex body for glacier management in the country**. A glacier is a large, perennial **accumulation of crystalline ice, snow, rock, sediment**, and often liquid water that originates on land and **moves downslope under the influence of its own weight and gravity**.

Status of Glaciers:

- Glaciers cover nearly **3% of Earth's surface and 11%** of Earth's land area
- **Source of three large river systems:** Indus, Ganges, Brahmaputra
- **Hindu Kush Himalayan** Region is known as the **“Water Towers of Asia”**
- **Himalayan** mountains are referred to as the **third pole**
- **India has over 16000 glaciers**. E.g Siachen glacier in the Himalayan region.

Threats recognized:

- **The majority of Himalayan glaciers are melting or retreating**, which will severely affect flow in Himalayan River systems
- **Melting glaciers can cause disasters** like Glacier Lake Outburst Floods (GLOF), glacier avalanches, etc.
- **Melting of glaciers may lead to the shift of tree lines** in the Himalayas and may also cause a change in the **phonological behaviour** of plants.
- **Lack of data sharing on hydrological information** with neighbouring countries
- **Multiple ministries/departments/institutions** with different mandates for dealing with Himalayan glaciers

New technology being used in upcoming state elections

- **cVIGIL Application** (for filing Model Code of Conduct Violation)
- **Suvidha Portal** (allows online nomination, Permission etc for political parties and candidates)
- **GARUDA** (Geographical Asset Reconnaissance Unified Digital App)—It helps in coordination between Booth Level officers (BLOs)

Other Proposed technological Reforms

- **Using blockchain technology to enable remote/e-voting**
- **Linking of Aadhaar with voter ID**
- **Electronically Transmitted Postal Ballot System (ETPBS)**
- **A voter verification system** that uses biometric software, such as facial recognition

The law of defamation and right to free speech [Article 19 (1)(a)]

- **Exceptions to defamation: Absolute truth and what is for the public good.**

- **The criminality of defamation** was challenged in the SC on the grounds that it was an **unreasonable restriction** on the constitutionally-guaranteed **right to freedom of speech and expression**.
- However, **the apex court upheld the British-era Section (Subramanian Swamy V. The Union of India 2016)**.

Analysing the 2016 SC verdict: Article 21 vs 19 (1)(a):

- The court held that **the right to “reputation”** was protected under **Article 21** of the Constitution which guarantees “life and personal liberty”.
- The right under Article 19(1)(a) **had to be “balanced” against the right to “reputation”** under Article 21.
- Thus, the **court elevated “reputation”** to the level of a **fundamental right** and made it **prevail over free speech**.
- Over the years, the court has expanded the scope of Article 21 **to force the state to undertake various “social justice” measures**.

Chevalier de la Légion d’Honneur” (Knight of the Legion of Honour)

- Philanthropist and art collector **Kiran Nadar** was recently conferred “**Chevalier de la Légion d’Honneur” (Knight of the Legion of Honour)** by French Ambassador to India Emmanuel Lenain.
- **Awarded for Contribution to the field of art, her commitment to providing greater access to culture both nationally and internationally**, and her leading role in **fostering Indo-French cultural ties**.

Nagri Dubraj rice

- The Geographical Indication Registry has granted Chhattisgarh’s aromatic rice, Nagri Dubraj, a geographical indication (GI) tag facilitating the brand to get a unique identity and a wide market.
- It is produced by a women’s self-help group “**Maa Durga Swasahayata Samuh**“. The grain finds reference in **Valmiki Ramayana**.
- It is an indigenous variety and has small grains, is **very soft to eat after cooking**, and is known as the **Basmati of Chhattisgarh** because of its fragrance

International

Comparison table of President Impeachment in USA and India

	USA	India
Grounds for impeachment	Conviction of treason, bribery, or other high crimes or misdemeanours	Violation of the Constitution (Art 61 provides the procedure for impeachment of the

		president.)
Houses involved in the impeachment	House of Representatives and Senate	Lok Sabha and Rajya Sabha
Initiation of impeachment charges	Any member of the House of Representatives can introduce a resolution of impeachment	Impeachment charges can be initiated by either House of Parliament
Signatures required for impeachment charges	Any member can introduce or the house can vote to enquire	One-fourth members of the House that framed the charges
Majority required for an impeachment resolution to pass	A simple majority (51%) in the House of Representatives and two-thirds (67%) in the Senate	Two-thirds (67%) of the total membership of the House that framed the charges and two-thirds (67%) of the total membership of the other House
Role of Chief Justice	Presides over the trial in the Senate	No role in the impeachment process

Saudi Arabia in SCO

- Saudi Arabia has approved a memorandum granting the kingdom the **status of a dialogue partner** in the Shanghai Cooperation Organization (SCO)
- Dialogue Partners refer to **individual sovereign states** and not members, but with a special interest and/or capacity to contribute, particularly in the areas of common interest.
- The number of dialogue partners in SCO is 7 (including Saudi Arabia)
- **SCO is an Intergovernmental Organization** founded in **2001 in Shanghai** by China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. **In June 2017 India** became a **full member** (same day as Pakistan)

Trade in Rupee

The **Ministry of External Affairs** announced that India and Malaysia have agreed to settle trade in the Indian rupees. The announcement came in the backdrop of ongoing official **efforts to Safeguard Indian trade from the impact of the Ukraine crisis**. It **indicates India is willing to take concrete steps towards the de-dollarisation of its international trade**.

Benefits: This mechanism will allow the Indian and Malaysian traders to **invoice the trade in Indian rupee and therefore achieve better pricing for goods and services traded**.

Malaysia is **the third largest trading partner of India in the ASEAN region**, after Singapore and Indonesia.

Science-Tech & Environment

Carbon Credit Trading Scheme (CCTS)

- A carbon credit is a tradable permit representing the **right to emit a set amount of carbon dioxide** or the equivalent amount of a different greenhouse gas. It equals **one tonne** of carbon dioxide **removed, reduced, or sequestered** from the atmosphere.
- The 'CCTS' means the scheme for the **reduction or removal of greenhouse gas (GHG) emissions notified** by the central government
- The parliament passed the **Energy Conservation (Amendment) Bill, 2022**. One of the provisions of this amendment included **empowering the central government** to “specify carbon trading scheme”, in consultation with the Bureau of Energy Efficiency (BEE).

Features of CCTS:

- **'Accredited carbon verifier'**: It is an agency accredited by the BEE to carry out validation or verification activities in respect of the CCTS.
- **Setting up of the Indian Carbon Market Governing Board (ICMGB)**: for oversight, making rules for the Indian carbon market, guidelines regarding the sale of carbon credit certificates to outside India and other regulatory functions. **Environment secretaries** would be the ex-officio co-chairmen of ICMGB.
- **The Bureau of Energy Efficiency** shall be the **administrator** for the Indian carbon market and shall also work as the secretariat for the ICMGB.
- **The Grid Controller of India Ltd** shall be the registry for the Indian Carbon Market.
- **Central Electricity Regulatory Commission (CERC)** shall be the regulator for the trading activities under the Indian carbon market

Microplastics

Microplastics are defined as **synthetic solid particles** sized ranging from **1 micrometre to 5 millimetres (mm)**, which are insoluble in water. They are **particularly harmful** to the oceans as they **don't readily break down into harmless molecules and adversely affect the health of marine organisms**, which mistake plastic for food.

Key findings of the new study:

- They found that from **1990 to 2005**, the number of plastic particles more or less fluctuated due to the **effective implementation of important policy measures** like **MARPOL Annex 5** which **enforced laws against dumping trash at sea**.
- **The concentration of plastic particles including microplastics in the ocean has skyrocketed in the oceans since the mid-2000s**, and it continues to increase.

- If the **world fails to take any drastic action about the issue, there will be a 2.6-fold increase in plastic flowing into aquatic environments by 2040.**

How do microplastics impact the oceans and marine life?

- Mechanical problems, such as **lacerations and blockages to internal systems** of organisms.
- Ingested plastics can **cause chemical problems by leaching absorb chemicals into organisms.**
- Microplastics **absorb many hydrophobic compounds, like DDT, PCBs and other industrial chemicals,** and evidence shows they can be released when ingested.
- Microplastics can also **disrupt the carbon cycle of the oceans.**

Photovoltaic (PV) waste

- India stands **4th** in solar PV deployment globally and its solar power installed capacity has reached **~62 GW** by 2022.
- India's latest **PLI scheme** promotes the domestic manufacturing of high-efficiency solar PV modules. This is great, but it also indicates **massive amounts of solar PV waste in the future.**
- India could generate **50,000-3,25,000 tonnes** of cumulative PV waste by 2030 and more than **4 million tonnes by 2050** (International Renewable Energy Agency) → expected to make India **one of the world's top five leading** PV waste producers.
- **~50% of total materials** can be recovered through waste management and recycling processes.

Challenges:

- **Growing informal (~80%) handling of PV waste** → **accumulates at landfills** → causes acidification, leaching of toxic metals (lead, cadmium) into the soil → contaminates the local water.
- **Gradual incineration** releases pollutants like sulphur dioxide, hydrogen fluoride, and hydrogen cyanide into the atmosphere.
- **Misinformation/ignorance** about appropriate disposal practices among multiple actors and institutions (producers/owners/consumers/waste disposal facilities) across the supply chain.
- **The market** to recycle PV waste is **minuscule in India** because of a lack of suitable incentives and schemes.
- **The absence of a body** to measure, monitor, and report solar PV waste.

Plant fungus infecting humans

- The first case of a plant fungus called **Chondrostereum purpureum** infecting human beings has been reported from Kolkata.
- The fungus is known to cause **Silver leaf disease in plants,** especially in species of rose families. However, there **were no reported instances of this fungus infecting human beings from any part of the world.**

Possible reason: Rising temperature due to global warming is thought of as one of the major reasons for this new threat to human beings. Most **fungi thrive in the range of 12°C to 30°C**.

SNAP-10A

Launched on **April 3, 1965**, **SNAP-10A** was the world's first **operational nuclear reactor in space**. **While it still remains in orbit, it was operational for just 43 days**.

Nuclear reactors: A class of **devices that contain and control sustained nuclear chain reactions**, these systems are at the heart of any nuclear power plant.

Nuclear Reactor in Earth orbit:

- The U.S.' first and only known space nuclear reactor, the SNAP-10A was the result of the **government-sponsored System for Nuclear Auxiliary Power (SNAP) programme, also known as SNAPSHOT for Space Nuclear Auxiliary Power Shot**.
- The SNAP reactors had liquid sodium-potassium alloy as the coolant. A thermoelectric **enriched uranium fuel with zirconium hydride as a moderator** converter was used to directly **convert heat from the reactor into electricity**.
- Russia has sent quite a few of them, **including one that crashed and scattered radioactive debris over Canada in 1978**.

Eravikulam National Park

- **Eravikulam National Park (ENP)**, the natural habitat of Nilgiri tahr in Munnar, has a new attraction — a **Fernarium set up inside the park**.
- A fernarium is a **type of botanical garden or greenhouse** that specializes in **cultivating and displaying various species of ferns**.
- Ferns are **part of the Epiphytic family**. They grow **naturally in a soilless condition**. The plants obtain **water and nutrients through leaching from trees**.
- Ferns are a **diverse group of plants that do not produce flowers or seeds** but instead **reproduce through spores**.

About Eravikulam National Park:

- Declared a **Sanctuary in 1975 and later a National Park (1978)** with the intention of protecting the indigenous population of **Nilgiri Tahr (highly endangered mountain goat)**.
- **"Neelakurinji"**, the flower that blooms once in twelve years grows here.
- The highest peak south of the **Himalayas – the Anamudi is located here**.

1st ever International Day of Zero Waste

- The **first-ever International Day of Zero Waste** was celebrated on **March 30, 2023**, to encourage people to prevent and minimize waste and promote a circular economy and help achieve the Sustainable Development Goals (11 and 12).
- **Established by:** The United Nations Environment Programme (UNEP) and UN Human Settlements Programme (UN-Habitat)
- **Objective:** To raise awareness about **zero-waste initiatives** and their importance in tackling the global waste crisis.

Titan

- NASA's Dragonfly mission to **explore Titan is scheduled for launch in 2027, and the spacecraft is expected to arrive at its destination in around 2034.**
- Titan is the **second largest moon (Saturn's) in our solar system (after Jupiter's Ganymede).**
- The **Dragonfly mission is part of NASA's 'New Frontiers' programme**, which also includes the New Horizons mission to Pluto and the Kuiper Belt; Juno to Jupiter; and OSIRIS-REx to the asteroid Bennu.

One of the biggest known black holes discovered

- Astronomers have discovered one of the biggest black holes ever found, **using gravitational lensing.**
- Gravitational lensing is the name given to the **phenomenon where a foreground object—a galaxy or a black hole—bends the light from a more distant object behind it, magnifying it in the process.**
- The researchers **used supercomputer simulations** that **simulated light from a faraway galaxy** travelling through the Universe **hundreds of thousands of times.** Each of the **simulations had a black hole of a different mass, changing the light's journey to Earth.**

India's first cloned desi Gir female calf Ganga

- The **National Dairy Research Institute** (est. 1956, under ICAR, based in Haryana's Karnal) has produced the **first-ever clone of a calf belonging to the indigenous Gir cow breed.** The calf has been named Ganga.
- Scientists used **three animals for producing this calf:** **Oocyte** was taken from the **Sahiwal breed**, a somatic cell from the **Gir breed**, and a **surrogate animal** was a crossbreed.
- Reproductive cloning is a process by which an exact genetic replica, or clone, of an existing organism, is created through a type of cloning called somatic cell nuclear transfer (SCNT). This involves removing the nucleus of an egg cell and replacing it with the nucleus of a somatic cell (a non-reproductive cell) from the organism to be cloned.

“Project Tiger”

- The Indian government will officially mark the **50th year of ‘Project Tiger’** on 9 April with a three-day event in Mysuru, Karnataka.
- **Project Tiger**-an initiative to save tigers, was first initiated in the year **April 1, 1973** in **Jim Corbett National Park**, Uttarakhand.
- **Objective:** To ensure the **maintenance of a viable population of tigers** in India for scientific, economic, aesthetic, cultural and ecological values.
- **Implementing authority:** National Tiger Conservation Authority (NTCA) (est. 2005; HQ: New Delhi)
- **18 States in India with 54 Tiger Reserves** (Guru Ghasidas National Park and the Tamor Pingla Wildlife Sanctuary in Chhattisgarh being the latest)

Cope India

The **Air Forces of India and the U.S.** are set to conduct the **Cope India exercise** at the **Kalaikunda airbase in West Bengal**, with Japan as an observer.

Why is it essential to reduce sodium intake?

- Salt reduction is a **cost-effective and practical approach** to preventing cardiovascular disease (the foremost cause of mortality worldwide).
- Reduced sodium intake → decreased blood pressure → decrease in stroke and heart attack incidences.
- **Staggering economic impact** of cardiovascular disease on low- and middle-income countries: ~2% of the GDP of LMICs due to premature mortality and disability.
- **India Scenario:** Average sodium consumption is **more than double** the physiological need and exceeds the **WHO’s recommended daily intake of <5 g of salt for adults.**

Vembanad and Ashtamudi Lake

- The National Green Tribunal (NGT) has imposed a **penalty of Rs 10 crore** on the Kerala government for failing to protect the Vembanad and Ashtamudi lakes (Ramsar list of wetlands)
- **Issues:** The wetlands had become polluted drains due to the **dumping of pharmaceutical waste, plastic waste, household waste, and slaughterhouse waste.**
- The penalty levied per the **‘polluter pays principle’** should be deposited in a **ring-fenced account**, which should be utilized under the chief secretary’s authority for conservation or restoration measure
- Vembanad Lake is largest lake in Kerala, the longest in India

Economics

National Electricity Plan for 2022-27

A new blueprint for the country's power sector planners – the **National Electricity Plan for 2022-27** – marks a discernible reversal in the policy.

Key takeaways:

- The fresh draft notes the need for an **additional coal-based capacity** of 28 GW by 2031-32, in addition to the 25 GW of coal-based capacity that is currently being built. A rise in the coal-fired power plants' **plant load factor (PLF)**, from 55% in 2026-27 to 62% in 2031-32. **This is an obvious admission of the ground realities.**
- **A predicted 51 GW to 84 GW battery storage** need with a daily usage rate of 5 hours in a push for renewable energy by 2031-32. Estimated at Rs. 10 crores per MW, this could equate to between Rs. 5 to 8 lakh crore in battery storage investments.

What marks a discernible reversal? The focus earlier was **almost entirely on renewable energy** for incremental capacity addition and fresh **coal-fired capacity was virtually ruled out.**

Foreign Trade Policy (FTP) 2023

- Ministry of Commerce and Industry launched the **Foreign Trade Policy 2023**, which will come into effect from **April 1, 2023.**
- FTP 2023 sets a **\$2 trillion target for exports of goods and services by 2030** with a shift from **incentives to remission and entitlement-based regime.**
- A trade policy is a government policy that affects the number of goods and services a country exports and imports.

Aim of FTP 2023:

- To enhance the **competitiveness of Indian exports** in the global market (India's overall exports are about to reach US \$760 billion this year)
- Promote **sustainable development of the country's trade sector**
- Make India a **leader in specific sectors** such as pharmaceuticals, engineering goods, and textiles
- To promote a **digital economy and leverage technology** to enhance the competitiveness of Indian exports.

Features of FTP 2023:

- The new policy focuses on **export promotion and development through automated IT systems** for various approvals, making it easier for MSMEs and others to access export benefits.

- Four new towns (Faridabad, Mirzapur, Moradabad, and Varanasi) have been designated as **Towns of Export Excellence (TEE) in addition to the existing 39 towns.**
- Exporter firms recognized with ‘**status**’ (e.g. 2-star, 4-star, 5-star ratings) based on export performance will now help in **skilling and training**
- The FTP aims at building partnerships with State governments and taking forward the **Districts as Export Hubs (DEH) initiative** to promote exports at the district level

Ethics & Society

Resolution condemning Hinduphobia

The Georgia Assembly (USA) passed a resolution condemning Hinduphobia, becoming the first state in the US to do so. The legislation acknowledges the **contributions of the American Hindu community** and condemns the “**antagonistic, destructive, and derogatory attitudes and behaviours**” towards Hindus that may manifest as prejudice, fear or hatred.

Hinduphobia is a term used to **describe a set of attitudes and behaviours characterized by prejudice, fear, hatred, or antagonism** towards Hinduism and Hindus. It can manifest in many forms, such as discrimination, stereotyping, and violence against individuals or communities of Hindu origin.

Lokpal

A parliamentary panel report has pointed out that Lokpal **disposed of 68% of corruption complaints** against public servants without any action in the last 4 years.

Other findings:

- **Only three complaints** were fully investigated
- **Nearly 90% of complaints** were not “in the prescribed format and hence rejected
- The Lokpal **has not prosecuted even a single person** accused of graft to date.

Current Affairs Update (Apr 8-14)

National

IT Rules amendments

The MeitY notified the IT (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules 2023.

About the amendments: It empowers the Union Government –**To designate an official fact checker** for ‘fake news’, and **To regulate the online real money games** (to be certified as “permissible” by a Self-Regulatory Body), where users deposit money in expectation of winnings.

Permissible: The outcome doesn’t depend purely on chance.

Not declared permissible: Fall under the **betting and gambling**

Cons:

- **Violates Shreya Singhal vs Union of India (2015)** – A verdict with clear guidelines for blocking content → Govt sets itself as **judge, jury and executioner**
- **Similar to censorship** → Chilling effect on the fundamental right to speech and expression → **legally contentious**
- **Lack of recourse/No right to appeal:** No other means of redress for intermediaries before the courts

Amrit Sarovar Mission

Amrit Sarovar Mission (launched on 24th April 2022) to develop and rejuvenate **75 water bodies in each district of the country**, creating 50,000 water bodies of a size of about an Acre or more, as part of the celebration of **Azadi ka Amrit Mahotsav**.

Departments involved: Department of Rural Development, Department of land resources, Department of Drinking Water and Sanitation, Department of Water Resources, Ministry of Panchayati Raj, and MoFECC

7 years of Stand-Up India

- As Stand-Up India completes 7 years, the PM acknowledged the role that the initiative has played in **empowering** the SC/ST communities, women and **job creation**.
- It **aims at promoting entrepreneurship** among women and scheduled castes and tribes.

- It was launched in **2016** and is anchored by the **Department of Financial Services (DFS)**, Ministry of Finance, Government of India.
- It facilitates **bank loans between Rs 10 lakh and Rs 1 Crore** to at least one SC/ST borrower and at least one woman borrower per bank branch **for setting up a greenfield enterprise** (the first-time venture) **only**.
- This enterprise may be in **manufacturing, services or the trading sector**.
- **In the case of non-individual enterprises**, at least 51% of the shareholding and controlling stake should be held by either an SC/ST or a woman entrepreneur.

Abuse of preventive detention law

SC has said that “Preventive detention laws in India are a **colonial legacy that has great potential to be abused and misused by the State** and any slightest error in compliance of procedure by authorities should result in favour of the detainee”

Previously the Court had observed that:

- The State should not arbitrarily resort to “preventive detention” to deal with all and sundry “law and order” problems
- Preventive detention could be **used only to prevent public disorder**.
- Courts must analyse cases arising from such laws with **extreme caution** to ensure there are **checks and balances** on the exercise of the power of the government.
- **Every procedural rigidity** must be followed in its entirety by the government in cases of preventive detention.
- Preventive detention must fall within the four corners of **Article 21(due process of law) read with Article 22** (safeguards against arbitrary arrest and detention) and the statute in question.

“Sealed cover jurisprudence”

It refers to a **legal practice where certain sensitive documents or information** are presented to a court in a sealed envelope or cover (to **protect the confidentiality of the information**), which only the judge or authorized persons can open and view. The judge will then decide whether the information can be used as evidence, remain confidential or be disclosed.

While a specific law **does not define the doctrine of sealed cover**, the Supreme Court derives its power to use it from Rule 7 of Order XIII of the Supreme Court Rules and **Section 123 of the Indian Evidence Act of 1872**.

What are “public interest immunity claims”?

It refers to situations where the **disclosure of certain information in a legal case might harm national security** or other important public interests. In such cases, the government or other parties can seek to withhold or redact such information.

Article 145 of the Constitution says that all judgments (decisions) made by the Supreme Court must be given in an open court where anyone can watch or hear. This means that the decisions cannot be made secretly.

According to Article 145(4), the court cannot give a judgment or report the opinions of judges in secret, it must be done openly in front of people.

Section 123 of the Indian Evidence Act of 1872: Under this act, official unpublished documents relating to state affairs are protected and a public officer cannot be compelled to disclose such documents.

National parties in India

Criteria: As per the **ECI's Election Symbols (Reservation and Allotment) Order 1968** [amended from time to time], a political party would be considered a national party if it fulfils any one of the below conditions:

- It is 'recognised' in **four or more states as a state party** [AAP fulfils this criterion]; or
- Its candidates polled **at least 6% of total valid votes** in any four or more states in the last Lok Sabha or Assembly elections and has at least four MPs in the last Lok Sabha polls; or
- It has won **at least 2%** of the total seats in the Lok Sabha from not less than three states.

Parties recognised: BJP, Congress, CPI(M), BSP, National People's Party (NPP) and the AAP

Raccoon Stealer

In a recent cyberattack, eight Central government entities, including central paramilitary forces and the Income Tax department, were targeted by the **Raccoon Stealer malware**. The attack was brought to the attention of the affected agencies by the **National Technical Research Organisation (NTRO)**, a specialized intelligence agency under the National Security Advisor.

Raccoon Stealer is an information stealing malware that is usually **delivered through email**. It retrieves sensitive data from infected machines and is available as **Malware-as-a-service (MaaS)**. This means that anyone can buy this malware and use it for malicious purposes.

The Raccoon Stealer malware can retrieve sensitive data, such as personal information, financial data, and login credentials. The attack has also highlighted the need for better cybersecurity measures in government agencies.

International

Issue areas between Bhutan-India

- **Border Dispute:** Disputes over the exact demarcation of the border between the two countries.

- **Hydropower Projects:** Concerns in Bhutan over environmental and social impacts from the project. Also, Bhutan has sought **greater revenue from these projects**
- **Trade Imbalance:** Bhutan is heavily dependent on India for its imports.
- **Cross-Border Movement:** Bhutan has restricted the cross-border movement of Indian workers, citing concerns over the impact on Bhutan's culture and society.
- **Political Interference:** Bhutan has accused India of interfering in its internal affairs, particularly during the 2013 elections.

First-Ever Anti-Spyware Declaration

- The US and 10 other nations (India is not part of it) issued the first-ever significant anti-spyware declaration
- **Aim:** The declaration seeks to realize the importance of **stringent domestic and international controls** on the proliferation and use of this technology.
- **Need for this declaration:** Threat posed by the misuse of commercial spyware e.g., Israeli software Pegasus, Hermit spyware
- **Countries involved:** Australia, Canada, Costa Rica, Denmark, France, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States

75 years of the WHO

- Despite some great successes, the 75-year-old World Health Organization (WHO) has received its fair share of criticism.
- It is a **specialised agency of the UN** (HQ – Geneva, Switzerland) established on **7 April** (World Health Day) 1948 and is responsible for **international public health**.
- **Members: 194** member states
- **The World Health Assembly** is the **decision-making body** of the WHO
- Composed of health ministers from member states, **WHA selects the director-general** of the WHO (**currently – Tedros Adhanom Ghebreyesus of Ethiopia**).

The Belfast/Good Friday Agreement

- Signed on April 10, **1998**, between factions of **Northern Ireland and the governments of Britain and Ireland**, to end 30 years of the violence known as 'The Troubles' in Northern Ireland.
- The Agreement has been hailed as **a model deal to end long-standing conflicts** and fetched a joint **Nobel peace prize**.
- The US President is to visit Belfast, the capital of Northern Ireland, to mark the 25th anniversary of the Good Friday Agreement.

Historical background:

- **Northern Ireland** was created in **1921** and in **1922** the rest of Ireland gained independence from the British (the today's Republic of Ireland, with its capital in Dublin).
- **Northern Ireland remained with the UK**, but tensions simmered between those who wished to remain with the UK (**Protestants**) and those who wanted to join Ireland (**Catholics**).
- **By the 1960s**, the Protestants had become more powerful and the Catholics started facing **discrimination**.
- The violence erupted between both factions – The Troubles, **claiming the lives of more than 3,500 people**.

Terms of the Good Friday Agreement:

- **Northern Ireland would continue to be a part of the UK.**
- **It could join Ireland if a majority of voters** on both sides supported it in a **referendum**.
- People born in Northern Ireland could have **Irish or British nationality or both**.
- Northern Ireland would get a **new government**, which would have powers over **local matters**, while the UK government would look after **security, foreign policy, tax laws, immigration rules, etc.**
- **On May 22 1998**, a referendum was held in Ireland and Northern Ireland, and the agreement was approved by 94% of voters in Ireland and 71% in Northern Ireland.

Order of White Eagle

Poland's highest order, the Order of the White Eagle, has a rich history dating back to its official institution on November 1, 1705, by **Augustus II the Strong**, King of Poland and Elector of Saxony. Originally bestowed on only eight of his closest diplomatic and political supporters, the order has become a symbol of prestige, honour, and service to the nation. Over the centuries, the order has been awarded to the most distinguished Poles for their merits and to the highest-ranking representatives of foreign countries.

During his visit to Poland, **President Zelensky** was awarded the "Order of White Eagle". In Warsaw, Zelensky met with President Andrzej Duda, who honoured him with the order.

Science-Tech & Environment

Gulf of Mannar Marine National Park

Located in the southernmost part of India, the Gulf of Mannar Marine National Park (GoMMNP) is a protected area covering an area of around 560 square kilometers. The park includes a group of 21 islands situated in the Gulf of Mannar, **Tamil Nadu**. The area was declared a marine national park in 1980 and later included in the **Gulf of Mannar Biosphere Reserve (GoMBR) in 1989**.

The vegetation in the GoMMNP is threatened by an invasive plant species called **Prosopis chilensis**. This plant species is native to Argentina, Bolivia, Chile, and Peru. It is known for its ability to spread rapidly, forming dense thickets that can displace native plant species. Another invasive plant species, **Prosopis juliflora**, was introduced in Tamil Nadu by the British in 1877, which is equally threatening to the natural vegetation of the area.

SLINEX-2023

SLINEX-2023 is the 10th edition of the annual **India-Sri Lanka Bilateral Maritime Exercise**. The exercise is aimed at improving mutual understanding, enhancing interoperability, and exchanging best practices/procedures in multi-faceted maritime operations between both Navies.

The exercise features two phases i.e., the Harbour Phase and the Sea Phase. The Harbour Phase is being organized in **Colombo, Sri Lanka** from April 3-5, followed by the Sea Phase from April 6-8, off Colombo.

Indian Space Policy (ISP) 2023

The government has approved the **Indian Space Policy (ISP) 2023**, to boost private sector participation and increase investments in the space sector from private companies.

Salient features:

- The policy seeks to **institutionalize the private sector participation in the space sector**, with ISRO focusing on **research and development of advanced space technologies**.
- The private sector can take **part in end-to-end space activities** that include building satellites, rockets, launch vehicles, data collection, and dissemination
- **Policy delineates the roles and responsibilities: ISRO** will focus on **developing new technologies, new systems, and research and development**. It will not do any operational and production work for the space sector.
- **NSIL**: It will carry out strategic activities related to the space sector and will work in a demand-driven mode. **INSPACE**: It will be the interface between Indian Space Research Organisation and non-governmental entities.

Initiatives by India towards the militarisation of space

- In 2019, India concluded the **first** table-top joint war game called '**IndSpaceEx**' – run by the military and space scientists.
- Demonstration of India's **Anti-Satellite (ASAT) capability** under **Mission Shakti**.
- Establishment of the new tri-service **Defence Space Agency (DSA)** – tasked with operating the space-warfare and Satellite Intelligence assets of India.
- **Mission DefSpace** was launched in 2022 for the development of innovative solutions in the space domain by the industry.

- **Indian DefSpace Symposium**, organised by the Indian Space Association (ISpA) and the DRDO under Mission DefSpace, to create a platform for all stakeholders who have a keen interest in boosting India's military space capability and plans.
- **Indian Space Association (ISpA)** is a voluntary association of leading space industries established with the objective of providing advisory and advocacy support to the space industry in India.

How AI tools can assist parliamentarians?

- In preparing responses for legislators,
- Enhancing research quality,
- Obtaining information about any Bill, preparing briefs,
- Providing information on particular House rules, legislative drafting, amendments, interventions, etc.
- AI can also **empower legislators** to make informed decisions by having access to Insights into citizen grievances, Media opinions, and Voices of citizen-centric associations.

30 years of Project Elephant

- President Droupadi Murmu took part in **Gaj Utsav at Kaziranga National Park and Tiger Reserve (KNPTR)** in Assam to mark **30 years of Project Elephant**.
- India has about 27,000 Asian Elephants, which is the world's largest population of the species.
- As per Elephant Census (2017), **Karnataka** has the highest number of elephants (6,049), followed by Assam (5,719) and Kerala (3,054)
- More than **60% of the world's elephant population** is in India.
- The elephant is the **Natural Heritage Animal of India**

Steps taken are:

- **Gaj Yatra** (a nationwide awareness campaign to protect elephants)
- **Monitoring the Illegal Killing of Elephants (MIKE)** program (2003, to monitor the effectiveness of field conservation efforts)
- **Gaj Soochna'** mobile application for forest officials
- Upholding the **right of passage of elephants** by SC
- **Involvement of mahouts and their families** in the welfare of elephants
- **Gaj Utsav**
- **Asian Elephant Alliance**, an umbrella initiative by five NGOs, had, last year, come together to secure 96 out of the 101 existing corridors used by elephants across 12 States in India.

Genome India Project

The Genome India Project, a Centre-backed initiative to sequence **10,000 Indian human genomes and create a database**, is about **two-thirds completed** and will be 100% complete by year-end. Of the **7,000**

genomes sequenced about 3,000 are already available for public access (as per the Department of Biotechnology)

A genome is a **genetic material that provides instructions** for the development, growth, and functioning of all living organisms, composed of DNA with a sequence of chemical bases that determines an organism's characteristics.

Genome sequencing is the process of determining the complete DNA sequence of an organism's genome. It involves identifying the order of nucleotides (A, T, C, G) that make up the DNA molecule in each of the chromosomes of an organism.

Hay fever

Japan's Prime Minister **Fumio Kishida** has recently vowed to tackle hay fever, a **pollen allergy** that affects a significant portion of the Japanese population. In a recent parliamentary committee, Kishida referred to hay fever as a "social problem" and pledged to work with ministers to devise a response to the issue.

Hay fever is a pollen allergy that typically causes itchy, watery eyes and sneezing. It is usually caused by the pollen of specific plants or trees, and its symptoms can range from mild to severe.

Dibang Wildlife Sanctuary

The Dibang Wildlife Sanctuary in Arunachal Pradesh, India is set to become a tiger reserve, according to the National Tiger Conservation Authority (NTCA).

The announcement has caused **concern among the Idu Mishmi people** who believe that the reserve would **restrict their access to the forest**.

Idu Mishmis are a sub-tribe of the Mishmi group (the other two Mishmi groups are Digaru and Miju) in Arunachal Pradesh and have a strong connection to the region's flora and fauna. According to Idu mythology, **tigers are their "elder brothers,"** and their belief system of myths and taboos protects many animals, including a prohibition on killing tigers.

Idu Mishmis are an example of a '**cultural model of conservation**' and they support wildlife protection.

Cellular agriculture

It is a way of **producing animal-based products, such as meat, milk, and eggs**, without the need for raising and slaughtering animals. Instead, these products are grown from cells in a laboratory using techniques such as **tissue engineering and fermentation**.

This technology has the potential to greatly reduce the environmental impact of animal agriculture, such as greenhouse gas emissions, land use, and water consumption.

Juice Mission

- The **JU**piter **IC**y moons **EX**plorer (JUICE) is a mission by the **European Space Agency (ESA)** set to launch on April 13, 2023, from the European Spaceport in Kourou, French Guiana.
- The primary focus of JUICE's science goals is the **Jupiter system**, with a particular emphasis on **Ganymede** as a planetary body and potential habitat. The mission objectives for Ganymede include the characterization of the ocean layers and detection of putative subsurface water reservoirs, topographical, geological, and compositional mapping of the surface.
- JUICE's investigations on **Europa** will be focusing on the chemistry essential to life, including organic molecules.

Tiger Census 2022

- The fifth cycle of the All-India Tiger Estimation (2022) was released to mark 50 years of Project Tiger
- **Conducted by:** The National Tiger Conservation Authority (NTCA) conducts tiger censuses in partnership with state forest departments, conservation NGOs, and the Wildlife Institute of India (WII).
- **Period:** Once every four years (2006, 2010, 2014, 2018)
- **Tiger population in India:** 3,167 in 2022, up from 2,967 in 2018 (growth by 200)
- Periyar Tiger Reserve (TR), Kerala is the best-maintained of all TRs followed by Satpura TR (Madhya Pradesh), Bandipur and Nagarhole (Karnataka)
- The **Nilgiri cluster (Nagarhole to Biligiriranga Hills)** is the largest tiger population in the world.

Economics

How is intellectual property (IP) protected in agriculture?

- There are now two forms of IPR protection in agriculture: **Plant Breeders' Rights (PBRs) and patents**.
- PBRs **give the breeder exclusive control over the propagating material** (including seed) and harvested material of a new variety of plants for a number of years, **preventing the unauthorised use** of seeds to develop new varieties.
- Together, they **restrict farmers' rights and the freedom to develop new varieties** using germplasm from IP-protected varieties.
- They have consolidated the seed sector by increasing the number of plant varieties covered by IP Rights (IPRs).

Problems triggered by IP protection:

- The private sector began to dominate the seed sector.

- The **high prices of genetically modified (GM)** seeds.
- The State's Intervention on Bt cotton Seeds in India.

Under the Plant Variety Protection and Farmers' Rights Act (PPVFRA) 2001, farmers can register varieties as 'farmer varieties' if they meet certain conditions, and have the right to reuse, replant and exchange seeds. However, they can't breed and trade in varieties protected under the Act for commercial purposes.

International Finance Corporation (IFC)

IFC (est. 1956; HQ: Washington, D.C; part of the world bank group) is an **international financial institution** that offers investment, advisory, and asset management services to encourage private sector development in developing countries.

The International Finance Corporation (IFC), the **private sector arm** of The World Bank, has said it will stop supporting investments in new coal projects. Previously, in 2020, IFC had **unveiled a policy requiring clients to reduce their exposure to coal projects by half by 2025, and to zero by 2030, but did not prevent new investments.**

Status of IFC lending in India: It has lent close to **\$5 billion to almost 88 financial institutions** in India.

Quality control orders

India has been issuing **quality control orders (QCO)** for products of mass consumption, including machinery safety equipment, pressure cookers, toys and air conditioners, **to curb Chinese imports and boost exports.** However, several WTO members have objected to this move and say that India's QCOs are protectionist and may not be compliant with the WTO's **Agreement on Technical Barriers**

The main aim of the QCO is to **control the import of sub-quality and cheaper items and to ensure that customers** get quality products. QCOs can only be challenged at WTO if they are imposed on grounds of health, safety, environment and deceptive trade practice, or national security. BIS certifies it for International and domestic products.

De-dollarization

De-dollarization refers to the process of reducing the use of the US dollar in international trade and finance. This may involve countries diversifying their foreign currency reserves by holding fewer US dollars and more of other currencies.

Need for de-dollarization: US dollar became the official reserve currency of the world in **1944 (by the Bretton Woods Agreement).** However, several countries have alleged that the US has been misusing dollar dominance by the imposition of sanctions as a tool to achieve foreign policy goals.

Recent steps by India for De-dollarization: Trade in Indian Rupee (agreement has been signed with 18 countries, including UK, Germany, Russia and the United Arab Emirates); Currency Swap agreement.

BRICS (Brazil, Russia, India, China and South Africa) are reportedly working on their own currency – established on a strategy that **‘does not defend the dollar or euro’**.

Ethics & Society

Human composting

Human composting, also known as **natural organic reduction**, is a process of transforming the **human body into nutrient-rich soil** that has emerged as an eco-friendly alternative to **traditional burial or cremation**.

Process: The process involves **washing and dressing the body** in a biodegradable gown, placing it in a closed vessel along with selected materials, and leaving it to decompose for 30 days with the addition of oxygen to speed up the process.

Advantages: The resulting soil can be used **for gardening or spread in designated memorial** grounds or forest conservation areas. Human composting costs around \$5,500, and is **much less energy-intensive than cremation**.

Opposition: The Catholic Church has been the biggest opponent of the process, calling it an “unfortunate spiritual, emotional, and psychological distancing from the deceased.”

Hikikomori

Hikikomori is a social phenomenon affecting people of all ages in Japan, where individuals withdraw from society and remain isolated for extended periods.

The term Hikikomori was coined in the 1990s in Japan to describe the phenomenon of social withdrawal. Hikikomori is not a clinical diagnosis but rather a social issue that affects individuals who choose to isolate themselves from society due to various reasons, including social anxiety, depression, academic pressure, and bullying.

Social isolation can lead to a lack of employment opportunities, financial hardship, and mental health issues such as depression and anxiety disorders. Moreover, the longer an individual remains in isolation, the harder it becomes to reintegrate into society.

Current Affairs Update (Apr 15-21)

National

The issue of narcotics trade

- **The narcotics trade**, which is assuming dangerous proportions all over the world, is a **social problem** that harms youth and families. The money it generates is diverted for disruptive activities that have bearings on **national security**.
- As India has been **sandwiched between** the Death (Golden) Crescent and Death (Golden) Triangle, it is being flooded with drugs, especially **heroin and methamphetamine**.
- Nearly **90% of the world's demand** for these drugs is being met from these two regions and India is **both a big market and a transit route** for other countries.
- 62% of the darknet is being used for illicit drug trafficking. **Cryptocurrency** payments and doorstep deliveries have made darknet transactions attractive.

Measures taken by the government:

- **Narcotics Control Bureau (NCB)**: It was constituted in 1986 under the **NDPS Act 1985** with the prime responsibility of **fighting drug trafficking and drug abuse**.
- **Nasha Mukh Bharat Abhiyaan (NMBA)**
- National Action Plan for Drug Demand Reduction (**NAPDDR**) for 2018-2025.
- The government constituted the Narco-Coordination Centre (**NCORD**) in 2016.
- **National Fund for Control of Drug Abuse**

Difference between Flash & Conventional Droughts

Flash drought is the **rapid onset or intensification of drought**. It is set in motion by **lower-than-normal rates of precipitation**, accompanied by **abnormally high temperatures (heat waves), winds and radiation**. Typically occurs during **warm seasons** and tropical/humid places are more vulnerable. Flash drought can also be tied to **rhythmic climatic patterns**, such as **El Nino** (in Asia) and **La Nina** (eastern Pacific) events.

Conventional Drought is a **slow-onset** (natural) **disaster** characterised by the lack of precipitation, resulting in a water shortage.

El Nino in India

- It is typically known as the **warm phase** of ENSO – a band of warmer water spreading from west to east in the equatorial Pacific Ocean → **brings rainfall in the central and eastern Pacific, and droughts in Australia, and Asia**. El Nino is more frequent than La Nina

- In 1997, India faced the strongest El Nino ever, but the monsoon was normal. Between 2001 and 2020, India saw **seven El Nino years** → Of these, **4 resulted in droughts** (2003, 2005, 2009-10, 2015-16).
- These years also saw **kharif or summer-sown farm output** (accounting for nearly half of the country's annual food supply) **decline** by 16%, 8%, 10% and 3%, leading to **inflation**.
- The 2023 El Nino is expected to develop following a **triple dip La Nina event** (2020-22).

Threats posed by El Nino:

- **A slippage of one percentage point** in monsoon rainfall will mean a below-normal monsoon.
- Drought drives up inflation, erodes farm incomes, reduces spending on consumer goods and hurts the overall economy.

Heat stroke

- Heat stroke/sunstroke/hyperthermia is the result of **overheating of the body** as a result of **exposure to high temperatures and humidity**
- High moisture content in the atmosphere **makes it difficult for sweat to evaporate and for bodies to cool down**.
- As a result of which the internal body **temperature increases sharply** → 41 degree Celsius or higher within 10 to 15 minutes.
- 13 people died due to heatstroke after they attended a large public gathering in the open in Kharghar, Navi Mumbai.

Global Buddhist Summit

- PM will inaugurate the first Global Buddhist Summit in New Delhi on April 20th and 21st.
- **Conducted by:** The Ministry of Culture+ International Buddhist Confederation (IBC)
- **Theme:** "Responses to Contemporary Challenges: Philosophy to Praxis."
- **Aim:** The summit aims to enhance cultural and diplomatic relationships with other countries and mark the significance and importance of India in Buddhism, as Buddhism was born in India.

Gond Painting

- Gond painting, popular folk art of the **Gond tribe in Madhya Pradesh**, has been awarded the Geographical Indication (GI) tag.
- Gond painting is one of the **most famous artworks** of the Gond tribal community, done to preserve, remember, and communicate the rich culture.
- The Gond tribe is **one of the largest tribal communities** in India. The name Gond comes from "**Kond**" meaning green mountains. Their main occupation is Agriculture or daily wages

Nagaland government repeal its municipal act

The Nagaland government, repealed the Nagaland Municipal Act of 2001, which included 33% reservation for women in urban local bodies, in the face of opposition from community-based organizations.

Nagaland is the only state in India where seats in Urban Local Bodies (ULBs) are not reserved for women, as mandated by the **74th Amendment to the Constitution**. The State government amended the 2001 Municipal Act in 2006 to include 33% reservation for women, but this move faced strong opposition, leading to the indefinite postponement of ULB polls in 2009. Recently, the Supreme Court pressurized the Nagaland government to hold ULB polls, but now the government has repealed the Municipal Act 2001.

The **apex tribal bodies (hohos)** in Nagaland have argued that women have traditionally not been part of decision-making bodies and that reservation of seats for women would violate customary laws. Several traditional tribal organizations **opposed the 33% reservation of seats for women** as they argue that such reservation would violate the **special provisions granted by Article 371A** of the Constitution to Nagaland.

Article 371A of the Indian Constitution is a **special provision made for the state of Nagaland**, to provide special safeguards for the protection of the **unique social and cultural practices, customs and traditions** of the Naga people, who have a distinct identity and history.

Animal Birth Control Rules, 2023

The Animal Birth Control Rules, 2023 have been notified by the Central Government on March 10th, 2023, under the **Prevention of Cruelty to Animal Act, 1960**. These rules supersede the Animal Birth Control (Dog) Rules, 2001 and address the 2009 guidelines of the Supreme Court issued during the hearing between **Animal Welfare Board of India** and People for Elimination of Stray Troubles. These rules aim to regulate and streamline the Animal Birth Control (ABC) program and address animal welfare issues.

The Animal Birth Control Rules, 2023 lay down guidelines for the sterilization and immunization of stray dogs as a means of population control. The responsibility for carrying out the ABC program lies with the respective local bodies, including municipalities, Municipal Corporations, and Panchayats.

The Animal Birth Control Rules, 2023 also take into account the orders of the Supreme Court, which have specifically mentioned that relocation of dogs cannot be permitted. This indicates that the rules prioritize non-lethal methods of population control and discourage the relocation of stray dogs from one area to another as a means of addressing the issue.

International

Safety across Asia for the Global Environment (SAFE)

China is not participating in a United Nations project called Safety Across Asia for the Global Environment (SAFE) to survey high-risk facilities, including Asian wet markets, that may cause the spread of infectious diseases from animals to humans. Also, Vietnam and Laos have yet to approve the surveys.

About SAFE:

- The project aims to **prevent future pandemics due to zoonotic, or animal-to-human**, disease transmission.
- **Launched in 2021** (will run until 2024)
- **Coordinated by:** United Nations Office on Drugs and Crime (monitors illegal wildlife trafficking)
- Funded by the **European Union**
- **Four Asian countries** – China, Thailand, Vietnam and Laos – were initially selected for the survey under the project

UN population report

- According to the **United Nations Population Fund's (UNFPA) State of World Population (SOWP) report 2023 – '8 Billion Lives, Infinite Possibilities'** – India is now the most populous country in the world.
- The population of the world is **8,045 million**. **Out of this, the largest share (65%) is of people between the ages of 15 – 64 years**, followed by those in the 10-24 years group (24%). **10%** of the population is **above 65 years of age**.
- The world's two most populous regions are **Eastern and South-Eastern Asia** [2.3 billion people – 29% of the global population]; **China and India** accounted for the largest populations in these regions, with more than 1.4 billion each in 2022.
- **68%** of India's population belongs to the 15-64 years category, and **26%** in the 10-24 years group, **making India one of the youngest countries** in the world.
- **The total fertility rate** in India has been steadily dropping [NFHS-5 (2019-21)- **2.0**, less than the replacement level of **2.1**].

Science-Tech & Environment

National Quantum Mission

The Union Cabinet of India recently cleared the National Quantum Mission, a groundbreaking initiative aimed at harnessing the power of quantum technologies. With a **budget of Rs 6,003 crore** and an

expected duration of eight years, the mission seeks to unlock the potential of **quantum computing, quantum communication, and quantum sensing.**

The National Quantum Mission is a significant milestone for India, as it places the country among the few nations that possess frontier technologies related to quantum computing, communication, and sensing. Currently, the **US, Austria, Finland, France, Canada, and China** are the only countries with dedicated quantum missions. However, unlike these countries, which are primarily in the research and development stage, India aims to be at par with them by combining expertise from research institutions and the industry through sustained funding.

One of the main goals of this mission is to achieve **long-distance quantum communication** across a 2000 km gap, either using satellites or fibers. Additionally, the mission aims to make significant progress in quantum computing by developing **50 physical qubits** initially and eventually scaling up to 1,000 qubits

Trojan Asteroids

- NASA's Lucy mission has captured its **first images of the Jupiter and Trojan asteroids** using its high-resolution L'LORRI camera
- Trojan asteroids are a group of asteroids that **share Jupiter's orbit around the sun**. There are two groups of Trojan asteroids, the "**Greeks**," which lead Jupiter in its orbit, and the "**Trojans**," which follow behind it.
- **Significance:** These asteroids are believed to be **ancient remnants from the early days** of the solar system, and studying them can provide insight into the formation and evolution of the planets. They hold clues to the formation of our solar system as they are gravitationally stable for billions of years.

Mangrove pitta birds

- A census of mangrove pitta birds was conducted in two coastal districts of Odisha, India, where the nearly threatened species is found.
- A total of **179 individual mangrove pitta birds** were counted, with the highest concentration found in the mangroves near the Mahipura river mouth inside the Bhitarkanika National Park.
- Bhitarkanika National Park is the **second-largest Mangrove ecosystem** in India. It is inundated with waters from rivers **Brahmani, Baitarani, Dhamra and Patasala** forming a unique ecosystem. It is the breeding place for the **Salt Water Crocodiles**. The Gahirmatha Beach which forms the boundary of the sanctuary in the east is the largest **colony of the Olive Ridley Sea Turtles**.

Clinical Trial

A clinical trial is a research study conducted on human participants to evaluate the safety, efficacy, and/or effectiveness of an intervention such as a drug, device, or behavioural therapy.

The objective of Clinical Trial: Clinical trials are an essential component of the **drug development process** and are necessary to determine the benefits and risks of new treatments.



The Clinical Trials Registry – India (CTRI) (est. 2007; maintained by ICMR (under the Ministry of Health and Family Welfare) a national clinical trial registry in India. It is **mandatory to register for every trial at CTRI** before commencing. CTRI is a **free online public record system** for the registration of clinical trials (both public and private research) conducted in India.

Toque Macaques

Sri Lanka is planning to **export 1,00,000 toque macaques to China**. The toque macaque is endemic to Sri Lanka and classified as **Endangered (IUCN)**. It is reddish-brown-coloured. The most characteristic feature is the toque-like swirl of hair on its head top.

Ethylene oxide

- The European Commission has **classified ethylene oxide as carcinogenic, mutagenic and toxic for reproduction** (previously it was classified as a fumigant)
- **Significance:** Agricultural products being exported to European Union will now be mandatorily tested.
- At room temperature, ethylene oxide is a **flammable colourless gas with a sweet odour**. It is used primarily to produce other chemicals, including **antifreeze**. In smaller amounts, ethylene oxide is used as a **pesticide** and a **sterilizing agent**. The ability of ethylene oxide to **damage DNA** makes it an effective sterilizing agent but also accounts for its cancer-causing activity.

Tuberculosis (TB)

Tuberculosis (TB) is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. It primarily affects the **lungs** but can also affect other parts of the body.

Status of TB in India and the world:

- **As per the WHO Global TB Report 2022:** India's TB incidence for the year 2021 is **210 per 100,000 population** (a decline of over 18% from 2020)
- **India has a large burden of the world's TB**, with an estimated economic cost of US\$100 million lost annually due to this disease.

Need for new TB vaccines: Bacille Calmette-Guérin (BCG) (the only available TB vaccine):

- Has **reduced in efficacy over the years** due to the development of multi-resistant TB
- It has **limited efficacy** in preventing pulmonary TB disease in adolescents and adults
- It does not prevent the **reactivation of latent pulmonary infection**.

Currently, two vaccines **VPM (Vaccine Projekt Management) 1002** and **MIP (Mycobacterium Indicus Pranii)** have been developed and identified for TB.

What is Genome Sequencing?

It is the process of determining the complete DNA sequence of an organism's genome. It involves identifying the order of nucleotides (A, T, C, G) that make up the DNA molecule in each of the chromosomes of an organism.

Repetitive DNA:

It refers to sequences of DNA that are **repeated multiple times within the genome of an organism**. These repetitive sequences can be short, consisting of just a few nucleotides, or very long, containing hundreds or thousands of nucleotides.

Usage: Some repetitive DNA sequences have been found to have important functions, such as regulating gene expression, maintaining the structure of chromosomes, and protecting against the insertion of foreign DNA. However, many repetitive sequences do not have a known function and are sometimes referred to as "**junk DNA**".

Satellite DNA:

The **simplest form of repetitive DNA is called satellites**, which are blocks of **DNA repeated over and over in tandem**. Satellite DNA is found in **telomeres**, which are the protective ends of chromosomes, and in **centromeres**, which help keep genetic information intact during cell division.

Usage: Researchers use satellite DNA as a genomic “**fingerprint**” to match crime scene samples and track ancestry.

Translocation of Big Cats and IBCA

The Indian government plans to **translocate big cats** annually to India (Cheetah) as well as from India to other countries, starting with **Cambodia**, where the tiger was declared extinct in 2016.

The **International Big Cat Alliance (IBCA)** will facilitate the mobilization of financial and technical resources for the overall ecosystem dealing with big cat species.

India’s first environmental referendum

Ten years ago, on April 18, 2013, the **Dongoria Kondhs**, a vulnerable tribal group in India, won a landmark legal battle in the Supreme Court against Vedanta Company’s plans to **exploit the Niyamgiri Hill for bauxite**.

The court recognized the **cultural, religious, and spiritual rights** of the tribe on the hill and gave the Gram Sabha the authority to **examine possible infringements** on their rights due to the proposed project. The Supreme Court **ordered a referendum** to be held amongst the affected Gram Sabhas to obtain consent on the project from the community, which unanimously voted against it.

The referendum resulted in a **rare registration of the Dongoria Kondhs’ claim for sovereignty, self-determination, and territorial autonomy**.

Helopeltis Theivora

The tea mosquito bug (Helopeltis Theivora) is spreading rapidly and affecting tea production in both low and high-elevation plantations in Southern India

About the Bug: It is a major sucking pest of tea (**Camellia sinensis L.**) in most tea-producing countries. The nymphs and adults of the TMB suck the sap from tender leaves, buds and young shoots, which results in heavy crop losses.

India is the **second highest producer of tea** (China is the largest producer and consumer of tea) in the world and makes up over **12 per cent** of world exports.

Economics

WTO panel rules against India

World Trade Organization (WTO) panel has ruled that **India has violated global trading** rules by imposing import duties on IT products, such as mobile phones and components, and integrated circuits.

Background of the dispute: India had introduced import duties of **between 7.5% and 20% for IT products- mobile, components, and ICs**. In 2019, the European Union (EU), Japan, and Taiwan filed complaints with the World Trade Organization (WTO), arguing that **India's import duties violated global trading rules** and exceeded the maximum rate allowed.

WTO recommendation: The WTO panel recommended that India should **bring the measures into conformity with its obligations**. India has already brought some of the **challenged tariffs into line with global trading rules** since last year.

Trade data

- **India's overall exports** surpassed the 2022-23 target of **\$750 billion dollars** (nearly \$770 billion)
- **Trade Balance (Export-Import):** Negative (\$122 billion in FY23 in comparison to \$83 billion in FY22).
- **Major items of export by India:** Petroleum, Electronics goods, rice, etc.
- **Major Items of import:** Petroleum and Coal.
- **Major Export Destinations:** USA, UAE, Netherlands and China.
- **Major Import Destinations:** China, UAE, USA and Russia.

Sangathan se Samriddhi

Ministry of Rural Development's Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM) launched "Sangathan Se Samriddhi- Leaving no Rural Woman Behind".

About the Campaign:

- It is a national campaign under **Azadi Ka Amrit Mahotsav Samaveshi Vikaas**
- **Aim:** To mobilize **10 crore women from** vulnerable and marginalized rural households under the Self-Help Group (SHG) fold.
- Currently, **9 crore women** already part of the SHG movement
- **Benefits:** sharing by SHG champions, mobilizing eligible women, training new SHG members, reviving defunct SHGs, and opening SHG bank accounts

What are SHGs?

They are small informal groups of **10-20 individuals**, mostly **women** from similar social and economic backgrounds, who come together to form a group for mutual support and help.

Solar Energy Corporation of India

- Solar Energy Corporation of India Limited (SECI) has been accorded the status of **Miniratna Category-I Central Public Sector Enterprise (CPSE)**

- CPSEs with a **continuous profit record in the last three years, pre-tax profit of at least Rs.30** crores in one of the three years, and a **positive net worth** are eligible for Miniratna-I status.
- The benefits of this status include **increased financial powers for investments**, greater autonomy in operations, improved corporate governance, and competitive advantage, among others.

Mission 50K-EV4ECO

The **Small Industries Development Bank of India (SIDBI)** has launched **Mission 50K-EV4ECO**, the initiative will fund the **purchase of 50,000 EVs in the country** to spur the local ecosystem.

About the mission:

- The pilot phase of 'Mission 50K-EV4ECO' will increase the uptake for two, three and four-wheelers through **direct (to MSMEs) and indirect lending (to NBFCs)**
- This scheme is the precursor to EVOLVE scheme by SIDBI-World Bank
- The Indian automobile industry **ranked fifth largest globally** and is expected to become the third largest by 2030. However, the sale of electric vehicles accounts for just 1% of total sales, currently.

Ethics & Society

Issues in same-sex marriage

- Marriage is a social status which is bestowed by law.
- **These laws do not recognise the rights of same-sex married couples** (right to adopt/have children by surrogacy, rights to inheritance, pension etc) even though the SC held that all adults have the right to marry a person of their choice.
- They will not be able to avail of legally accrued benefits of laws. **For example, The Transplantation of Human Organs Act** only allows near relatives to object to the use of a deceased's body for organ donation. **Section 80 of the IT Act 1961** provides for the deduction of certain sums for computing the total income of an assessee when such sums are paid on behalf of a spouse.

Challenges faced by Civil Society Organizations

The CSOs are **non-State, not-for-profit, voluntary entities** formed by people in the social sphere that are separate from the State and the market.

- **Less flexible** in reorienting their normative and operational methodologies.

- **Still clinging to outdated tactics.** For example, protests at Jantar Mantar undoubtedly bring activists together but they do less to shape the thinking or action of governments.
- Similarly, **articles/papers, and speeches** at think tanks/conferences/symposiums do not affect governments into any substantive course correction.
- **Even lobbying legislators** to raise issues is ineffective as the political parties do not let Parliament function.
- **Fails to blend socio-cultural values** with welfare/constructive work or calls to protect constitutional values.
- Consequently, they are **unable to guide mass consciousness.**

Current Affairs Update (Apr 22-30)

National

Operation Kaveri

- The Indian government has launched a rescue operation in **Sudan** to evacuate its stranded citizens. The operation, named Operation Kaveri, is currently underway.
- The **Sudanese army and a paramilitary group** have been engaged in an armed conflict for the last 10 days. The conflict has claimed over 427 lives, including at least 273 civilians, and more than 3,700 people have been wounded.
- As per official data, around 4,000 Indians are stuck in Sudan. The Indian government has deployed two **C-130s aircraft** and the navy ship **INS Sumedha** on standby to evacuate Indians from the violence-hit African nation.
- The rescue operation in Sudan has been named Operation Kaveri for a symbolic reason. Kaveri is an **important river** flowing through Karnataka and Tamil Nadu, worshipped as **Goddess Kaveriamma**. The name represents a river that reaches its destination despite barriers, symbolizing the safe return of Indians stuck in Sudan.

Hakki Pikkis

The Hakki Pikki tribe is a **nomadic tribe** that resides in several states in western and southern India. They are especially concentrated in forest areas where they practice their traditional occupation of bird catching and hunting. The tribe's name itself reveals a lot about their history and identity. "Hakki" means "bird" in Kannada, while "Pikki" means "catchers". This highlights the tribe's close association with birds and their expertise in capturing them.

The tribe's **traditional occupation of bird catching** and hunting has become increasingly difficult due to the strict implementation of wildlife protection laws. Consequently, the tribe members have had to shift to alternative livelihood options.

The tribe originated in the bordering districts of Gujarat and Rajasthan, but over time, they have migrated to different parts of India, where they continue to face social, economic, and political marginalization. The 2011 census figures show that the Hakki Pikki tribe's population in Karnataka was around 12,000

Kesavananda case

Fifty years ago, on **April 24, 1973**, the SC delivered its landmark judgment in **Kesavananda Bharati vs the State of Kerala**. A **13-judge Constitution Bench** of the SC (with a 7-6 majority) redefined the relationship

between Parliament and the Constitution by ruling that the “**basic structure**” of the Constitution is inviolable, and cannot be amended by Parliament.

While the Parliament had vast powers to amend the Constitution, **certain parts** (“basic structure”) **are so inherent and intrinsic to the Constitution** that even Parliament cannot touch it.

Constitutional amendment entirely struck down by the SC:

The Constitution (99th Amendment) Act 2014, which established the National Judicial Appointments Commission (NJAC) was struck down in 2015 on the grounds that it threatened “**judicial independence**” – a basic feature of the Constitution.

6 instances when SC partially struck down an amendment: Out of 6, 5 were during the Indira Gandhi era.

- **Kesavananda Bharati vs State of Kerala (1973):** While the court upheld the land ceiling laws that were challenged, **it struck down the following portion of the 25th Amendment (1972)** –If any law is passed to give effect to the **DPSP** it cannot be deemed to be void on the ground that it abridged rights under **Articles 14, 19 or 31**.
- **Indira Gandhi v Raj Narain (1975):** The SC struck down The Constitution (39th Amendment) Act 1975, which barred it from hearing a challenge to the election of President, PM, VP, and Speaker of Lok Sabha.
- **Minerva Mills Ltd vs Union Of India (1980):** The SC struck down a clause inserted in **Article 368**, which said there shall be **no limitation on the constituent power of Parliament**.
- **P Sambamurthy v State of Andhra Pradesh (1986):** The SC struck down a portion of the 32nd Amendment (1973), which constituted an Administrative Tribunal for Andhra Pradesh, **taking away the jurisdiction of the High Court**.
- **L Chandra Kumar v Union of India (1997):** The top court struck down a portion of the 42nd Amendment 1976, which set up administrative tribunals excluding judicial review by High Courts.
- **Kihoto Hollohan vs Zachillhu And Others (1992):** The SC upheld The Constitution (52nd Amendment) Act that introduced the **10th Schedule/anti-defection law** in the Constitution. However, the only portion of the amendment that was struck down was that **the decisions of the Speaker relating to disqualification cannot be judicially reviewed**.

Powers of the governor under Article 200

The SC said that governors should clear bills passed by the legislative assemblies as soon as possible, as mandated under Article 200 of the Indian Constitution.

Article 200:

- **It gives governors the power to either grant assent** to a bill, withhold assent or reserve the bill for the president's consideration in certain cases.
- **The governor may return the bill** (if it is not a Money Bill) requesting the House/Houses to reconsider the bill.
- If such a bill is passed again by the House/Houses with/without amendment and presented to the governor for assent, **the governor shall not withhold assent.**

All India Report of First Census of Water Bodies

- Ministry of Jal Shakti has launched the **1st Census of Water Bodies** in convergence with the 6th Minor Irrigation (MI) Census under the **Centrally Sponsored Scheme "Irrigation Census"**.
- Since water is a **state subject** under the 7th Schedule of the Indian Constitution, the relevant State Governments are primarily responsible for taking action.
- Through a number of schemes and programs, **the Central Government offers technical and financial assistance to support their efforts.**

Highlights of the first census:

- **24,24,540** water bodies have been enumerated in the country, out of which **1%** are in rural areas and only **2.9%** in urban areas.
- West Bengal's **South 24 Parganas** has been ranked as the top district having the highest (**55 lakh**) number of water bodies across the country.
- **West Bengal** has the highest number of ponds and reservoirs, whereas **Andhra Pradesh** has the highest number of tanks.
- **Tamil Nadu** has the highest number of lakes and **Maharashtra** is the leading state with water conservation schemes.

Water Budget

A **water budget** is a tool used to manage water resources by **estimating the total amount of water available** in a region and the amount of water used by different sectors.

Benefits:

- It helps in making **informed decisions** about water use
- Identifying areas of water scarcity
- Developing strategies for equitable water distribution.

- Create awareness about proper water use and avoiding wastage.

Kerala became the first state to **adopt a water budget**, as a solution to water scarcity during summer months to ensure equitable water distribution.

UDAN 5.0

- The **Ministry of Civil Aviation** in India has launched the 5th round of the **Regional Connectivity Scheme (RCS) – Ude Desh Ka Aam Nagrik (UDAN)** to improve connectivity in remote and regional areas of the country.
- **UDAN Scheme** was launched as a Regional Connectivity Scheme (RCS) under the Ministry of Civil Aviation in **2016**, to provide **affordable, economically viable and profitable air travel** on regional routes to the common man even in small towns.
- It envisages **providing connectivity to un-served and underserved airports** of the country through the revival of existing airstrips and airports.

PRAYAG Platform

Jal Shakti Ministry launched PRAYAG, a real-time monitoring centre for planning and monitoring of projects, river water quality, etc., during the 11th meeting of the Empowered Task Force of the National Mission for Clean Ganga (NMCG)

PRAYAG (Platform for Real-time Analysis of Yamuna, Ganga and their Tributaries) monitors various projects through various online dashboards such as Ganga Tarang Portal, Ganga Districts Performance Monitoring System, etc.

16th Civil Services Day

National Civil Service Day, observed on April 21 every year, is a celebration of the idea of national civil service. The **first** National Civil Services Day was celebrated on **April 21, 2006**.

It commemorates the day when **Sardar Vallabhbhai Patel** – independent India’s first Home Minister, inaugurated the newly-created Indian Administrative Service in 1947, calling them the “**steel frame of India.**”

Delhi’s Zafar Mahal

The Archaeological Survey of India (ASI) is set to begin conservation works at Zafar Mahal in south Delhi’s Mehrauli, which was once the **summer palace of Bahadur Shah Zafar**, the last Mughal emperor.

It was built by Emperor Akbar Shah II and completed by Bahadur Shah Zafar, the last Mughal Emperor in the 18th and 19th Century. The annual festival or procession known as **Phulon ki Sair** starts from Zafar Mahal and was started by **Khawja Bhaktiyar Kaki** as a protest against the British.

The competitive advantage of the North Eastern region

- Blessed with **vast natural resources**.
- **Its strategic location**, sharing borders with Nepal, Bhutan, China, Bangladesh and Myanmar, is an asset.
- **The population**, with its good education, already excels in the services sector drawing potential investor attention.
- The long-term vision is for Bangladesh and the northeast to become **a hub and key industrial corridor of this region**, serving a population of 220 million

The challenges:

- **Japan as a single investor** in the northeast is unworkable.
- Restrictions on the flow of investments from Bangladesh.
- Little attention seems to be paid to the **BIMSTEC**. This must change to progress towards the vision of establishing the **Bay of Bengal Community (BOBC)**.

Rule of Law

- It states that **'the Law is supreme and no human being has authority over it'**. In India, the Rule of Law is **guaranteed** by the **Constitution (Article 14)**, which means that all authorities must strictly adhere to it.
- **Supremacy of Law**: All individuals, including government officials, are subject to the law and no one is above the law.
- **Equality before the Law**: All individuals are equal under the law and are entitled to the same legal rights and protections, regardless of their social status or wealth.
- **Individual Rights**: The Rule of Law protects individual rights and freedoms, including property rights, freedom of speech, and personal liberty.

International

C+C5

China convened a meeting (online) of trade ministers of the grouping known as **C+C5**. It constitutes China and the five Central Asian republics, **namely Uzbekistan, Kazakhstan, Tajikistan, Turkmenistan, and Kyrgyzstan**.

Beijing's targeting of the Muslim population of Xinjiang has triggered resentment in these countries, where Islam is the principal religion. **The increasing presence** of Chinese workers and rapid land acquisitions by China in these countries has led to public protests.

CARICOM

External Affairs Minister S Jaishankar co-chaired the 4th India-CARICOM ministerial meeting

About Caribbean Community (CARICOM): CARICOM (est. in 1973; HQ: Georgetown, Guyana) is an intergovernmental organisation that is a political and economic union of 15 member states throughout the Americas and Atlantic.

Markets in Crypto Assets (MiCA)

- The European Parliament has approved the world's first set of comprehensive rules – MiCA – to bring largely unregulated cryptocurrency markets under the ambit of government authorities. **A comprehensive framework** for 27 countries in Europe **not only harmonises** the crypto industry but also gives the EU **a competitive edge in its growth**.
- **22% of the global crypto industry** was concentrated in Europe, which received \$1.3 trillion worth of crypto assets.
- **2022 saw bankruptcies and fraud scandals** in the crypto industry (collapse of the crypto exchange FTX, etc).

The Markets in Crypto Assets (MiCA) legislation:

- **MiCA will impose compliance on the issuers of crypto assets** (legal person who offers to the public any type of crypto-assets).
- It will apply to **crypto-asset service providers (CASPs)** providing services like the custody, administration, and exchange of crypto assets.
- **It requires crypto companies to send information** about senders and recipients of crypto assets to their local anti-money laundering authority.

Goldman Environmental Prize

Alessandra Korap, a Munduruku Indigenous woman from Brazil, has won the **Goldman Environmental Prize** for her leadership in defending her **community's lands against illegal mining**, hydroelectric dams, and other environmental crimes.

The Goldman Environmental Prize (est. 1989; by the Goldman Environmental Foundation) is a prize awarded annually to grassroots environmental activists, one from each of the **world's six geographic regions**: Africa, Asia, Europe, Islands and Island Nations, North America, and South and Central America. The award is also called the **Green Nobel**.

Nagorno-Karabakh

Nagorno-Karabakh is a landlocked, mountainous area in the South Caucasus that has been a source of conflict between Armenia and Azerbaijan for decades. It is predominantly populated by ethnic Armenians but is internationally recognized as part of Azerbaijan.

The **First Karabakh War** took place from 1988 to 1994, resulting in the deaths of about 30,000 people. The war ended with a ceasefire that left Nagorno-Karabakh and some surrounding territories under Armenian control, but the international community still recognizes it as part of Azerbaijan.

The **Second Karabakh War** broke out in 2020, and Azerbaijan emerged as the victor. One of the main reasons for Azerbaijan's success was its use of drones purchased from Turkey and Israel.

Science-Tech & Environment

PSLV-C55 Mission successful

- **Launch site:** Satish Dhawan Space Centre in Sriharikota
- **Launch vehicle:** Polar Satellite Launch Vehicle
- **No of satellites launched:** 2 (Both from Singapore)
- **Nature of satellites:** Earth Observation satellite
- **Name of satellites:** TeLEOS-2 & Lumelite-4
- **Highlights:** It marks ISRO's first commercial mission of the year 2023, and also its first mission to use the PSLV Orbital Experimental Module (POEM) – a spent fourth stage of the launch vehicle that has been repurposed as an experimental platform for scientific experiments.
- PSLV-C55 is a dedicated commercial PSLV mission of **NewSpace India Limited (NSIL)**, for the international satellite customer from Singapore

Indian skimmers

The Satkosia wildlife sanctuary in India has recorded the breeding of Indian Skimmers for the first time. The Indian Skimmer is native to **India, Bangladesh, Myanmar, Nepal, Pakistan** and Vietnam. Located in **Odisha** on the banks of the **Mahanadi River**, the sanctuary is one of the **critical tiger habitats** by the National Tiger Conservation Authority (NTCA).

Biomass pellets

- These are a type of **solid fuel** made from **compressed organic material** (biomass) such as industrial waste and co-products, food waste, agricultural residues, energy crops, and untreated lumber.
- These are of two kinds – **torrefied** (Biomass processed at 250-350°C in the absence of oxygen) and **non-torrefied pellets** (biomass is shredded, ground and sent to a pellet reactor, where it is compressed and bonded).
- **Emissions** such as NO_x, SO_x and volatile organic compounds from pellet burning equipment are in general very low.
- **A recognized problem is the emission of fine particulate matter into the air.**

- **The capital expenditure** for setting up a pellet manufacturing unit entails variables such as land, machinery, air pollution control devices, factory infrastructures such as sheds and offices, etc.
- **Indira Gandhi Super Thermal Power Project of NTPC** in Jhajjar, Haryana has taken steps towards facilitating the establishment of pellet manufacturing units.

What is Earth's Energy Imbalance?

- It refers to the difference between the **amount of energy that the Earth receives from the Sun and the amount of energy that it radiates** back to space.
- **Positive EEI:** When this imbalance is positive, it means that **more energy is entering the Earth's system than is leaving it**, which leads to a warming planet.
- **Significance:** EEI is an important indicator of climate change and provides an estimate of how much and how fast the Earth's climate is warming.

EMIC plasma wave

Scientists in India have identified a type of **plasma wave called Electromagnetic Ion Cyclotron (EMIC) waves** at the Indian **Antarctic station, Maitri**.

Plasma is often referred to as the **fourth state of matter**, along with solid, liquid, and gas. It is a type of gas that is **made up of electrically charged particles**, such as ions and free electrons. Plasma can be found in many places, including **flames, lightning, and the sun**.

What are Electromagnetic Ion Cyclotron (EMIC) waves?

It is a type of plasma wave that is generated in the **Earth's magnetosphere**, a region of space around the Earth that is affected by the planet's magnetic field. These waves can resonate with charged particles, particularly ions, that are trapped in the magnetosphere, causing them to **move in a cyclical motion**.

Significance of the study of EMIC waves: The study can help understand the impact of energetic particles (esp. Killer electrons) in the radiation belts on the low orbiting satellites. **Killer electrons** are electrons **having speed close to the speed of light**, which form the radiation belt of planet Earth

Biodiversity Heritage Sites (BHS)

West Bengal recently notified **four more biodiversity heritage sites (BHS)**, taking the tally in the state to eight.

The four new sites are **Char Balidanga** and the **state Horticulture Research and Development Station campus in Deypara** — both in Nadia, **Namthing Pokhar in Darjeeling** and the **Amkhoi Fossil Park in Birbhum**.

Morel Mushroom

Guchhi, also known as Morel mushroom, is a prized delicacy found in the Himalayan region. It is a wild mushroom belonging to the **Morchellaceae family** and is known for its unique spongy head. It is a rich source of **vitamins B, C, D, and K**, making it an excellent addition to a healthy diet. Additionally, it is low in calories, fat-free, and contains high amounts of protein. The cost of Guchhi per kg varies from ₹ **30,000 to ₹ 50,000**, depending on its availability and demand.

Economics

Global Unicorn Index

- After the United States and China, India has retained the third-highest number of unicorns in the world (Hurun Report on Global Unicorn)
- **India, with 68 unicorns** has added **14 new unicorns** since the pandemic began and stands behind USA (666) and China (316)
- **Top-most unicorn in India:** BYJU's (\$22 billion); Swiggy and Dream11 (both at \$8 billion)
- **Offshore unicorn:** India (70) has more than China (32) and both countries produce more offshore unicorns than any other country

World Bank's Logistic Performance Index 2023

- India has climbed six places in the World Bank's Logistic Performance Index (LPI) 2023, now ranking 38th out of 139 countries (from 44 in 2018)
- **Dimensions:** 6 (Customs, Infrastructure, International Shipments, Logistics Competence and Quality, Tracking and Tracing, Timeliness). It ranks countries on a scale of **0 to 5, with 5** being the highest score.
- **Top performers:** Singapore and Finland

Reasons for improvement in India's performance:

1. **Investments in Soft Infrastructure:** PM Gati Shakti Scheme; National Logistics Policy; Cargo Tracking, use of RFID
2. **Investment in hard infrastructure** e.g., trade-related infrastructure; reduction of delays in cargo tracking and dwell times, etc.
3. **Investment in Technology:** Digitalisation; implementation of supply chain visibility platforms

Ethics & Society

Population: Boon or Bane

- India will have a population of **142.86 crores by mid-2023**, which is 2.9 million higher than China's population of 142.57 crores.
- With a total fertility rate of **2.0 in 2023**, India is already at **replacement level fertility**, meaning two children replacing their parents.
- This indicates that the population is on a path toward **stabilisation** – experiencing positive growth (in a decelerated mode) until 2064 and then will become **negative growth**.
- The peak of India's population size will be around **169.6 crore in 2063**.
- **With 68%** of the working age population in 2023, the country continues to have a **demographic window of opportunity for the next 35 years** to reap an economic dividend.

Mechanisms through which a country translates demographic bonus into economic dividend:

- **Employment or job creation:** If India is able to generate sufficient and quality jobs for its bulging working age population.
- **Education, skills generation and ensuring a healthy lifespan:** It is critical not only for better productivity but it also reduces excessive public spending and helps in greater capital creation.
- **Good governance:** Reflected through conscientious policies, it will help in creating a healthy environment for increasing efficiency and productivity of the population.

World Development Report 2023

The 'World Development Report 2023: Migrants, Refugees, and Societies' was recently released by the World Bank.

The World Development Report (WDR) is an **annual** report published since **1978** by the International Bank for Reconstruction and Development (**IBRD**) or **World Bank**. It provides an in-depth analysis of a **specific aspect of economic development**.

Highlights of the WDR 2023:

- **The share of working-age adults will drop sharply** in many (developed) countries over the next few decades.
- Most low-income countries are expected to see rapid population growth, putting them under pressure to create **more jobs for young people**.

Challenges:

- As populations across the globe **age** at an unprecedented pace, **the global competition for workers and talent will intensify**.
- About 184 million people worldwide (including 37 million refugees) **lack citizenship in the country in which they live**.