



CSB IAS ACADEMY

THE ROAD MAP TO MUSSOORIE

Hyderabad | Vijayawada

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Polity

CENSUS OF INDIA

Context: The Union Home Ministry unveiled two mascots, Vikas and Pragati, for the upcoming Census in 2027.



About Census:

- Population Census is the total process of collecting, compiling, analyzing and disseminating demographic, economic and social data pertaining, at a specific time, of all persons in a country or a well-defined part of a country.
- The census was first started under British Viceroy **Lord Mayo in 1872**.
- The first **synchronous and decadal census was taken in 1881**, by W.C. Plowden, Census Commissioner of India. Since then, censuses have been undertaken uninterruptedly once every ten years.
- The last census was undertaken in 2011.
- The **Census of India Act of 1948** provides the legal framework for carrying out the Census - however, it does not mention its timing or periodicity.
- Hence, a census is legally mandated in India but there is **no constitutional or legal requirement that it needs to be conducted decennially**.

- In India, the census is conducted by the Office of the **Registrar General and Census Commissioner under the Ministry of Home Affairs**.
- In March 2020, the Ministry of Home Affairs (MHA) amended the Census Rules framed in 1990 – in order to capture and store the Census data in an electronic form and enabled self-enumeration by respondents.
- Until 1951, the Census Organisation was set up on an ad-hoc basis for each Census.

National Population Register (NPR):

- NPR is a database containing a list of all usual residents of the country.
- A usual resident is a person who has **resided in a place for six months or more and intends to reside there for another six months** or more.
- It is generated through house-to-house enumeration during the “house-listing” phase of the Census.
- NPR was **first collected in 2010**. It was updated in 2015 and already has details of 119 crore residents.
- The NPR is **prepared under the provisions of the Citizenship Act 1955** and the Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules, 2003.
- It is mandatory for every “usual resident of India” to register in NPR.

National Register of Citizens (NRC):

- The NRC is a record containing the names of genuine Indian citizens residing in the country.
- It aims to identify and deport illegal immigrants as mandated by the Citizenship

Act of 1955, Foreigners Act of 1946 and Passport (Entry into India) Act, 1920.

- The **only nation-wide NRC** was created in **1951**, after 1951 Census. **At present, only Assam has an NRC.**
- The nodal agency for the NRC is the Registrar General and Census Commissioner.

NRC in Assam

- ✓ It aims to **identify genuine citizens** who were residing in Assam as of **March 24, 1971** & thereby address immigration concerns.
- ✓ Over the years, Assam witnessed major illegal migration, estimated at around **6 million out of its 26 million population** – which led to socio-political complexities.
- ✓ In 1978, the All Assam Students Union (AASU) started the **Assam Movement** demanding detection & deportation of illegal immigrants.
- ✓ The **Assam Accord** was signed in **1985** between PM Rajiv Gandhi and AASU leaders, promising to identify illegal immigrants who arrived after March 24, 1971.
- ✓ After much delay, the NRC process in Assam began in 2013 due to an order of the Supreme Court.
- ✓ The NRC updating in Assam was carried out under the Citizenship Act of 1955 and the Assam Accord of 1985 to identify illegal Bangladeshi migration.



According to UN data, India surpassed China to become the world's most populous country in 2023.

SECTION 6A OF CITIZENSHIP ACT, 1955

Context: Protests are being held in Manipur seeking implementation of Section 6A of the Citizenship Act, 1955.



About Section 6A of the Citizenship Act, 1955:

- Section 6A was enacted as part of the **Citizenship (Amendment) Act, 1985, following the Assam Accord of 1985.**
- The Assam Accord was a tripartite agreement between the **Union Govt, the Govt of Assam, and the leaders of the Assam Movement (specifically the All Assam Students' Union or AASU)** - which tried to end the influx of illegal migrants from Bangladesh.
- Clause 6 of the accord promised **constitutional, legislative and administrative safeguards**, to preserve and promote the cultural, social, linguistic identity and heritage of the Assamese people.
- The main aim was to protect the indigenous identity of the Assamese people. The clause was added in response to **changes in population ratios and demographics due to the influx of migrants from Bangladesh.**
- The Assam Accords also introduced Section 6A in the Citizenship Act of 1955, and this provision was **meant exclusively for Assam.** It addresses the issue of large-scale

migration preceding the 1971 Bangladesh Liberation War.

- It mandates **detection & deportation of foreigners who entered Assam after March 25, 1971**, marking the creation of Bangladesh.
- The introduction of Section 6A reflects the specific historical and demographic challenges faced by Assam during this critical period.

Provisions and Implications:

- Section 6A created a special provision for Assam by which persons of Indian origin who **came from Bangladesh before 1st January 1966, were deemed to be citizens of India** as of that date.
- Persons of Indian origin who came to Assam **between 1st January 1966, and 25th March 1971**, and who were detected to be foreigners, were **required to register themselves and were granted citizenship** after 10 years of residence, subject to certain conditions.
- Persons who entered Assam after 25th March, 1971, were to be detected and deported under the law.




EVM (Electronic Voting Machine):

- EVMs **enable the voter with a button for each choice of candidate**. It is attached by a cable to an electronic ballot box.
- Election Commission (ECI) in Dec 1977 mooted the idea of EVM to overcome problems related to use of ballot papers and **ensure votes are cast correctly without ambiguities** & to remove invalid votes.
- **First used in 1981** in elections to North Paravur Constituency (Kerala Assembly). EVMs were **commissioned on a national level in 1989**.
- In 1988, a new **Section 61 A was inserted in the Representation of People Act, 1951** empowering ECI to use voting machines.

Measures to secure EVMs:

- **Functional check:** The machines are cleaned and earlier results are cleared. Switches, buttons, cables and latches are inspected for damage.
- **Random check:** A mock poll is conducted on 5% of the total number of EVMs to be used for a poll.
- **Placement:** EVMs are randomly placed in constituencies and booths and it is difficult to know which machine is kept at what location.
- **A dry run:** Before the start of the actual poll, a mock poll is conducted with at least 50 votes in the presence of candidates or their agents.

 In July 2019, the Home Ministry had formed a committee, chaired by retired Assam High Court Justice Biplab Kumar Sarma, to provide recommendations on implementing Clause 6 of the Assam Accord.

EVM AND VVPAT

Context: The Election Commission has started verification and deployment of EVMs and VVPAT for the upcoming set of state legislative assembly elections.

- **Safe and secure:** EVMs are placed in their carrying cases and sealed. They are transported under armed escort.
- **Stand Alone Machines:** EVMs feature software burnt one-time on to electronic chips, enabling their use as stand-alone machines rather than computer-connected units, thus preventing any hacking.

Voter Verifiable Paper Audit Trail (VVPAT):

- VVPAT is an **independent verification printer machine attached to EVMs** that allows voters to verify that their votes were recorded accurately.
- As soon as voters press the button on the EVM, **VVPAT machine prints a slip containing the name and symbol of the party** they have voted for.
- **First introduced in 2014 Lok Sabha elections** and were introduced to increase transparency and eliminate doubts about accuracy of EVMs.
- VVPAT machines can be accessed by polling officers only.
- Similar to EVMs, VVPATs are separate entities and are **not connected to any network**.
- The SC in **Dr. Subramanian Swamy v ECI (2013)** held that VVPAT is an "indispensable requirement of free and fair elections".
- **Use of VVPATs falls under Rule 49A of Conduct of Elections Rules of 1961**, which states that all EVMs shall have a control unit and a balloting unit.

FOREIGN CONTRIBUTION REGULATION ACT (FCRA)

Context: The Union Govt. is set to introduce the FCRA Amendment Bill 2026 - to bridge legal gaps in the management of assets created through foreign funds.



About FCRA:

- It was originally enacted during the **emergency in 1976**.
- **Reason for enactment:** Apprehensions that foreign powers were interfering in India's affairs by pumping money into the country through independent organizations.
- The law sought to **regulate foreign donations** to individuals and associations so that they functioned in a manner consistent with the values of a sovereign democratic republic.

Amendments:

- **2010 Amendment:**
 - Enacted to consolidate the law to regulate the **acceptance and utilization of foreign contribution** by certain individuals or associations and to **prohibit** acceptance and utilization of foreign contribution for any **activities detrimental to the national interest**.
- **2020 Amendment:**
 - Prohibiting the **transfer of foreign contribution to any other person** or organization.
 - **Reducing the limit** of usage of foreign contribution for **administrative expenses** from 50% to 20%.

FCRA Registration:

- Registration under the FCRA is **essential for receiving foreign donations** in India.

- It's granted to **individuals** or **associations** engaged in various areas of work, including **cultural, economic, educational, religious, or social programs**, among others.
- The FCRA regulates foreign contributions in these defined areas to **ensure transparency and compliance with the law**.

Criteria:

- The FCRA requires every person or NGO seeking to receive foreign donations to be:
 - **registered** under the Act.
 - to open a bank account for the receipt of the foreign funds in **State Bank of India, Delhi**
 - to utilize those funds **only for the purpose for which they have been received** and as stipulated in the Act.

Prohibitions under FCRA:

- The applicant **must not** represent **fictitious entities**.
- The applicant **should not** have been involved in **religious conversion** activities, either directly or indirectly.
- The applicant should not have a history of prosecutions related to **communal tension or disharmony**.
- The applicant must not be engaged in activities related to **sedition**.
- The FCRA prohibits **election candidates, journalists, media companies, judges, government servants, politicians, and political organizations** from receiving foreign funds.
- While **foreign contributions from relatives are generally exempted** from strict FCRA prohibitions, they are **not exempt from reporting to the govt.** if they exceed a certain amount.

Validity and Renewal:

- FCRA registration is valid for **five years**.
- NGOs are required to apply for renewal **within six months** of the registration's expiry.

- The government can cancel an FCRA license for violations of the Act or a lack of reasonable activity in their chosen field for two consecutive years.
 - Once cancelled, an NGO is **ineligible for re-registration for three years**.

Proposed Changes (2026):

- **Designated Authority for Assets:** Allows the government to appoint a "designated authority" to take over, manage, or dispose of assets created out of foreign funds by NGOs whose FCRA registration has been suspended, cancelled, or not renewed.
- **Expanded Definition of "Key Functionary":** Now includes directors, partners, trustees, Hindu Undivided Family (HUF), office-bearers of societies/trusts/trade unions, and any person with control over management.
- **Prior Approval for Investigations:** Any law enforcement agency or State government must seek prior approval of the Union Govt. before initiating investigations under the Act.
- **Timelines & Automatic Cessation:** Fixed timelines for receipt and utilisation of foreign funds; and automatic cessation of registration upon expiry or non-renewal.
- **Reduced Imprisonment:** Reducing the maximum imprisonment for FCRA offences from 5 years to 1 year.

MODEL CODE OF CONDUCT

Context: TN CM M K Stalin's article on the One Nation One Election mentions the Model Code of Conduct.




About Model Code of Conduct:

- It is a set of norms issued by the Election Commission of India.
- First introduced in the state assembly elections of **Kerala in 1960**.
- These norms have evolved with the consensus of political parties who have consented to abide by the principles embodied in the code.
- It prescribes how political parties, contesting candidates and parties in power should conduct themselves during elections.

Date of enforcement: MCC is enforced from the **date of announcement of election schedule** by the Election Commission and is operational till the process of elections are completed.

Applicability:

- Throughout the entire country during General elections to Lok Sabha.
- Entire state during elections to legislative assembly.
- Entire district or districts during bye-elections.

 The Model Code of Conduct is not legally enforceable. Certain provisions can be enforced through corresponding provisions in other statutes such as IPC, CrPC and Representation of People Act. The **Dinesh Goswami Committee** had recommended partial statutory enactment of the MCC.

Election Commission of India

- ✓ It is a constitutional body established under Article 324 of the Constitution.
- ✓ It administers elections to the:
 - Lok Sabha and Rajya Sabha
 - State Legislative Assemblies
 - Offices of President and Vice President.

Structure:

- ✓ Originally a single member body.
- ✓ Election Commissioner Amendment Act 1989 made it a multi-member body.
- ✓ Presently it consists of a Chief Election Commissioner and two Election Commissioners.
 - They enjoy the same status as judges of Supreme Court.

Appointed by: President

Tenure: 6 years or up to the age of 65

- ✓ Retiring ECs are not barred from any further appointment by the government.

NATIONAL HUMAN RIGHTS COMMISSION (NHRC)

Context: The issue of custodial death has brought the role of the NHRC into focus.



**National
Human
Rights
Commission
(NHRC)**

About the National Human Rights Commission (NHRC):

- NHRC was **established under the Protection of Human Rights Act, 1993** and aims to safeguard and promote human rights in the country.
- **Mandate of NHRC:**
 - Address human rights violations
 - Provide remedies to victims

- Create awareness about human rights among the public.

Composition of NHRC:

- **Chairperson and 5 other members** - appointed by **President** of India.
- **Chairperson must be retired Chief Justice of India or retired SC judge.**
- **Members:** Serving/retired SC judge, a serving/retired HC Chief Justice & 3 other persons (at least one must be a woman) with knowledge or practical experience in human rights.
- 7 ex-officio members:
 - **Chairpersons of National Commission for Minorities**, National Commission for **SCs**, National Commission for **STs**, National Commission for **Backward Classes**, National Commission for **Women & National Commission for Protection of Child Rights**; and the Chief Commissioner for **Persons with Disabilities**.
- Chairperson and members are appointed by the President based on **recommendation of a 6-member committee** consisting of:
 - Prime Minister as its head
 - Lok Sabha Speaker
 - Rajya Sabha Deputy Chairman
 - Leader of Opposition in Lok Sabha and in Rajya Sabha
 - Union home minister

Conditions for Appointment:

- **Sitting SC judge or sitting HC Chief Justice** can be appointed only after **consultation with CJI**.
- Holds office for **3 years or age of 70**, whichever is earlier. They are **eligible for re-appointment**.
- After their tenure - **not eligible for further employment under union govt or a state govt**.

- **President of India can remove chairperson/member** from office under following circumstances:
 - Adjudged an **insolvent**
 - Engages, during term of office, in any **paid employment outside duties of their office**
 - Unfit to continue in office due to **infirmity of mind or body**
 - Of **unsound mind** and stands so declared by a competent court
 - **Convicted and sentenced** to imprisonment for an offence.
- They **can also be removed on grounds of misbehaviour or incapacity**. But in such cases, the President **has to refer matter to SC for an inquiry**.
- If SC, after the inquiry, upholds cause of removal and advises so, then President can remove the person.
- **Salaries and conditions of service determined by union govt** - but cannot be varied to disadvantage after appointment.

Annual Reports of NHRC:

- Submits its **annual/special reports to union and state govts** concerned.
- **Reports laid before Lok Sabha, Rajya Sabha and respective legislatures**.
- **The govt. must table a Memorandum of action taken** on recommendations & reasons for non-acceptance of any recommendations.


Role and Power of NHRC:

- Recommendations are **advisory**.
- **No power to punish** violators of human rights, **nor award any relief**.
- **Recommendations are not binding** - but NHRC should be **informed about action taken on its recommendations** within 1 month.
- **Limited jurisdiction on human rights violations by armed forces** - may seek a **report** from union govt and make its

recommendations – union govt must inform NHRC about action taken within 3 months.

State Human Rights Commission (SHRC):

- ✓ Protection of Human Rights Act of 1993 provides for creation of State Human Rights Commission.
- ✓ Can inquire into violation of human rights only for subjects mentioned in List II and List III of 7th Schedule.
- ✓ If case already being inquired into by NHRC or any other statutory body - then SHRC does not inquire.

 The **GANHRI** (Global Alliance of National Human Rights Institutions) **deferred accreditation of NHRC in May 2023 and in 2024** and the process is currently under review, citing objections like political interference in appointments among others. GANHRI had granted 'A' status of accreditation to NHRC in 2017. Without accreditation, **NHRC cannot represent India with voting rights or leadership role** at UN human rights forums, though it may attend as an observer. The **Paris Principles**, adopted in 1993 by the UN General Assembly, provides the international benchmarks on which National Human Rights Institutions (NHRIs) can be accredited.

ESSENTIAL COMMODITIES ACT

Context: Amid the US-Iran conflict, India has directed refiners to increase Liquefied Petroleum Gas (LPG) production under the Essential Commodities (EC) Act, 1955.



About Essential Commodities Act:

- It was enacted by the Government of India to **ensure the availability of essential goods** to citizens at **fair prices and prevent hoarding, black marketing, and artificial shortages**.
- Historically, this legislation has been the primary tool used by the government to curb hoarding, offset retail inflation, and maintain national food security.
- There is **no specific definition of essential commodities** in the Essential Commodities Act, 1955.
- **Section 2(A)** of the Act states that an **“essential commodity”** means a commodity specified in the Schedule of the Act.
- Under **Section 3**, the Central Government can control the production, supply, and distribution of essential goods.
- It can impose **stock limits, regulate trade, fix prices, and restrict hoarding**.
- Under **Section 5** of the Act, the Central Government may delegate its powers under Section 3 to State Governments or authorized officers, enabling swift and effective enforcement at the ground level.
- **2020 Amendment:** The Parliament amended the Act in 2020 to **restrict the Centre’s power** to regulate specific commodities (cereals, pulses, potatoes, onions, edible oilseeds, and oils) **strictly to extraordinary circumstances** such as war, famine, extraordinary price rise, and natural calamity of grave nature.
- **LPG under EC Act:** Petroleum products, including LPG, are classified as **“Essential Commodities”** under the Essential Commodities Act, 1955.
- The Central Government has **directed oil refineries to maximise production of LPG** and **ensure its distribution is prioritised for domestic households**.
- Refineries have also been **prohibited from diverting propane and butane streams to**

petrochemical production, ensuring these inputs are used primarily for LPG supply.

RIGHTS OF PERSONS WITH DISABILITIES ACT 2016

Context: The SC noted that the RPwD Act 2016 does not indicate that an upper limit could be prescribed in adjudging suitability of a candidate for a post.



About Rights of Persons with Disabilities Act 2016:

- A PWD is defined as someone who has a **long-term impairment that affects their physical, mental, intellectual, or sensory abilities** & this impairment **prevents them from participating fully and effectively in society**.
- The main categories of disability are: **Behavioural/Emotional; Sensory; Physical; and Developmental**.
- The **types of disabilities have been increased from 7 to 21**. The act added mental illness, autism, spectrum disorder, cerebral palsy, muscular dystrophy, chronic neurological conditions, speech and language disability, thalassemia, haemophilia, sickle cell disease, multiple disabilities including deaf blindness, acid attacks and Parkinson's disease.
- In addition to this, **Union Govt. has been authorized to notify any other category of specified disability**.

- It increases quantum of **reservation from 3% to 4% in govt jobs and from 3% to 5% in higher education institutes**.
- Every child with benchmark disability between ages of 6 to 18 shall have the **right to free education**.
 - The Act specifies a "Person with Benchmark Disability" as having **at least 40% of a specified disability**.
- **Chief Commissioner for PWDs and State Commissioners** will act as regulatory bodies and Grievance Redressal agencies.
- **National and State Funds** has been created to provide financial support to the persons with disabilities.
- The act also seeks to provide financial incentives for employers who choose to employ PWDs.
- Nodal agency: **Ministry of Social Justice and Empowerment**

Other Policy Initiatives:

Accessible India Campaign:

- ✓ Aims to enhance accessibility by making changes to infra, information and communication systems.

DeenDayal Disabled Rehabilitation Scheme:

- ✓ Central Sector Scheme implemented since 1999 for providing financial assistance to NGOs working for education and rehab of PWDs.

Harmonized Guidelines and Space Standards for Universal Accessibility in India:

- ✓ Prepared by Ministry of Housing and Urban Affairs has been included in RPWD (Amendment) Rules, 2023.
- ✓ Guidelines are not just for PWDs, but also for those involved in planning projects, from construction of govt buildings to master-planning cities.

Unique ID for persons with disabilities (UDID) card:

- ✓ Aims to create a National Database for PwDs and thereby enable them to obtain UDID card to avail schemes and benefits provided by the govt.

DELIMITATION

Context: TN CM M.K. Stalin called for convening a special session of Parliament for amendments to the Constitution on delimitation.

Delimitation concerns: Tamil Nadu CM urges people to have more children



About Delimitation:

- Delimitation means the act or process of **fixing limits or boundaries of territorial constituencies** in a country or a province having a legislative body.

History:

- The last delimitation exercise that changed the state-wise composition of the Lok Sabha was completed in **1976** and done on the basis of the **1971 census**.
- As per the Constitution, the allocation of seats in **Lok Sabha** should be based on the **population of each state** and the ratio of seats to population should be as close to equal in all states.
 - This led to the concern that states that did not implement family planning measures

would become politically stronger (larger number of seats in Parliament).

- **The 42nd amendment** therefore froze the allocation of seats till 2000 at the 1971 level.
- **84th and 87th amendments** further extended this and the next delimitation exercise is set to happen in 2026.

Constitutional provisions:

- **Article 82** and **Article 170** of the Constitution empowers the Parliament to readjust the allocation of seats in the Lok Sabha and the Legislative Assemblies of States respectively, after every census.

Delimitation Commission:

- Appointed by: **President of India** and it works in collaboration with the Election Commission.
- **It consists of:** Retired Supreme Court judge (Chairperson), Chief Election Commissioner, concerned state Election Commissioners.
- **Functions:**
 - To determine the number and boundaries of constituencies to make the population of all constituencies nearly equal.
 - To identify seats reserved for Scheduled Castes and Scheduled Tribes, wherever their population is relatively large.
- The Delimitation Commission in India is a high-power body whose orders have the force of law and cannot be called in question before any court.

OPIUM CULTIVATION IN INDIA

Context: Legal cultivation of opium poppy (*Papaver somniferum*) in India is restricted to a few regions, primarily in the Malwa region of Madhya Pradesh and the Mewar region of Rajasthan.

- **Opium poppy** (*Papaver somniferum*) is a flowering plant cultivated for the latex-rich

capsules that produce opium and its derivatives.

- It is the world's primary natural source for morphine, codeine, thebaine, and other alkaloids used in medical and illicit drug markets.
- In India, opium production became a **government-controlled monopoly** under the East India Company and later the British, with major factories at **Ghazipur and Patna**.
- After Independence, cultivation and manufacturing came under the Central Government (1950).
- India regulates all activities through the NDPS Act, 1985, and is the only country producing licit opium gum for pharmaceuticals.
- **Characteristics:**
 - **Climate Needs:** Thrives in cool, dry regions with low humidity and well-drained soils.
 - **Latex Production:** When the green capsule is lanced, a milky latex emerges that naturally contains morphine, codeine and other alkaloids
 - **Harvest Process:** Farmers manually score the pods, collect the dried latex the next day and submit it to authorised government centres for weighing, grading and processing.
 - **Crop Cycle:** The poppy is an **annual winter crop** that matures in about 120 days, enabling systematic monitoring and controlled harvesting by regulatory authorities.
 - The crop is typically **sown after Deepavali and harvested after Holi in March**.
- India strictly licenses cultivation only in MP, Rajasthan and UP with **annual yield criteria** and tight monitoring.
- Legal cultivation of **opium poppy (Papaver somniferum)** in India is restricted to a few regions, primarily in the **Malwa region of Madhya Pradesh** and the **Mewar region of Rajasthan**.
- Thousands of farming families in districts such as **Mandsaur, Neemuch, Ratlam (MP)** and **Pratapgarh, Chittorgarh, Kota, and Jhalawar (Rajasthan)** cultivate the crop under licences issued by the Union government.
- These regions together produce **about 85% of India's legally grown opium**.
- The cultivation, licensing, and procurement are regulated by the **Central Bureau of Narcotics**, which issues two types of licences:
 - **Opium gum licence:** Farmers extract latex by **lancing poppy capsules**.
 - **Concentrate of poppy straw (CPS) licence:** the entire poppy capsule and straw are procured without lancing.
- The farming process requires **skilled labour and careful protection of fields**, as farmers must guard crops from animals such as **nilgai** and ensure controlled harvesting of latex.
- The extracted **raw opium latex is procured by the government**, while by-products like **poppy seeds (khus khus/posto dana)** are also obtained from the crop.

International Relations

THE PERSIAN GULF

Context; The region is going through a massive exchange of missile attacks leading to the death of the Supreme Leadership of Iran.



About the Region

- It is **part of the Indian Ocean, located in Western Asia.**
- It is an extension of the **Gulf of Oman and connects to the Indian Ocean via the Strait of Hormuz in the east.**
- It is also referred to as the **Arabian Gulf or Gulf of Iran.**
- It lies between the Arabian Peninsula and Iran to the southwest and northeast, respectively.
- It covers approximately 251,000 km², with a maximum depth of 90 meters and an average depth of 50 meters.

- It is bounded by several countries, including **Iran to the north, Qatar, Saudi Arabia, and the United Arab Emirates on the peninsula, and Bahrain, Iraq, and Kuwait in the northwest.**
- Its western end is marked by the major river delta of the Shatt al-Arab, which carries the waters of the **Euphrates and Tigris rivers.**
- It has a coastline length of about 5,117 km, with Iran having the longest coastline (1,536 km).
- **Islands:**
 - There are several islands in the Persian Gulf, including Bahrain, the Persian Gulf state. Bahrain comprises over 50 islands centered on the Bahrain Island.
 - Qeshm Island is the largest island in the Persian Gulf, covering approximately 1,491 km² (almost 2.5 times the size of Bahrain).

Significance of the region for India:

- **Energy Security:** The region is a primary source of India's crude oil and natural gas imports.
- **Economic Relations & Diaspora:** Hosts large Indian expatriate population, bringing a large sum of remittance
- **Strategic Connectivity:** Projects like the Chabahar Port (Iran) are crucial for India's regional connectivity and trade interests.

MUNICH SECURITY CONFERENCE (MSC)

Context: The Munich Security Conference speeches reflect the visions of Mr. Vance and Mr. Rubio.



About Munich Security Conference:

- It is the **world's leading forum** for debating **international security policy**.
- **Objective:** To build trust and contribute to the peaceful resolution of conflicts by sustaining a continuous, curated, and informal dialogue within the international security community.
- It has been **held in Munich, Bavaria, Germany, since 1963**.
- The conference is **held annually in February**.
- The venue is the **Hotel Bayerischer Hof in Munich, Bavaria, Germany**.
- It is a venue for diplomatic initiatives to address the world's most pressing security concerns.
- It brings together security experts, and politicians, military leaders, and the defense industry from around the world.
- MSC regularly convenes high-profile events on particular topics and regions and publishes the Munich Security Report, an annual digest of relevant figures, maps, and research on crucial security challenges.

INTERNATIONAL ATOMIC ENERGY AGENCY

Context: The Director General of the International Atomic Energy Agency (IAEA) appeared to contradict claims by the Donald Trump administration that Iran was actively building a nuclear weapon.



IAEA

International Atomic Energy Agency

About International Atomic Energy Agency:

- IAEA is an **intergovernmental organization** that seeks to **promote the peaceful use of nuclear energy** and to **inhibit its use for any military purpose**, including nuclear weapons.
- It was established in **1957** as the world's "**Atoms for Peace**" organization within the UN, and governed by its own founding treaty - the **Statute of the IAEA**.
- **History:** Though established as an autonomous organization, independently of the United Nations through its own international treaty, the IAEA Statute, the IAEA **reports to both the United Nations General Assembly and Security Council**.
- **Headquarters:** Vienna, Austria.

Functions:

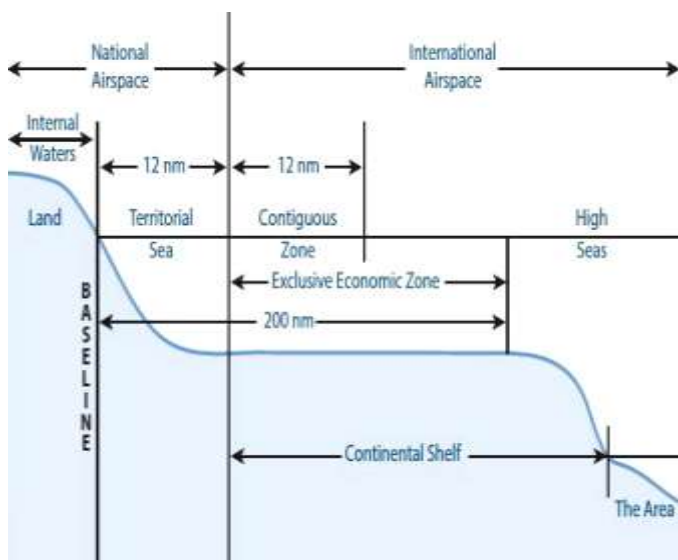
- The Agency works with its Member States and multiple partners worldwide to **promote the safe, secure and peaceful use of nuclear technologies**.
- It applies **nuclear safeguards** – consisting of monitoring, inspection, information analysis,

and other activities – to verify that nuclear activities remain peaceful and detect and deter their diversion, including to weapons-related purposes.

- In particular, the IAEA implements **comprehensive safeguards agreements mandated by the Nuclear Non-Proliferation Treaty (NPT)**, which serve as a first line of defense against nuclear weapons proliferation.
- IAEA assists its Member States and promotes the exchange of scientific and technical information between them.
- IAEA enhances national, regional, and international capacities to respond to nuclear and radiological incidents, which is essential to minimizing their impact.

UNITED NATIONS CONVENTION ON THE LAW OF THE SEA

Context: The legality of international naval actions under the UNCLOS is being discussed in the context of the ongoing Iran war.



About the UNCLOS:

- The United Nations Convention on the Law of the Sea (UNCLOS), 1982 is an international agreement that **establishes**

the legal framework for marine and maritime activities.

- It is also known as **Law of the Sea**. It divides marine areas into five main zones namely- Internal Waters, Territorial Sea, Contiguous Zone, Exclusive Economic Zone (EEZ) and the High Seas.
- It is the **only international convention which stipulates a framework for state jurisdiction in maritime spaces**. It provides a different legal status to different maritime zones.
- It provides the **backbone for offshore governance by coastal states** and those navigating the oceans.
- It not only zones coastal states' offshore areas but also provides specific guidance for states' rights and responsibilities in the five concentric zones.

Maritime Zones

Baseline:

- It is the low-water line along the coast as officially recognized by the coastal state.

Internal Waters:

- Internal waters are **waters on the landward side of the baseline** from which the breadth of the territorial sea is measured.
- **Each coastal state has full sovereignty over its internal waters** as like its land territory. **Examples** of internal waters include bays, ports, inlets, rivers and even lakes that are connected to the sea.
- There is **no right of innocent passage** through internal waters.
- The innocent passage refers to the passing through the waters which are not prejudicial to peace and security. However, the nations have the right to suspend the same.

Territorial Sea:

- The territorial sea **extends seaward up to 12 nautical miles (nm) from its baselines**.
- A nautical mile is based on the circumference of the earth and is equal to one minute of latitude. It is slightly more than a land measured mile (1 nautical mile = 1.1508 land miles or 1.85 km).
- The coastal states have **sovereignty and jurisdiction over the territorial sea**. These rights extend not only on the surface but also to the seabed, subsoil, and even airspace.
- But the coastal states' rights are **limited by the innocent passage** through the territorial sea.

Contiguous Zone:

- The contiguous zone **extends seaward up to 24 nm from its baselines**.
- It is **an intermediary zone between the territorial sea and the high seas**.
- The coastal state has the right to both prevent and punish infringement of fiscal, immigration, sanitary, and customs laws within its territory and territorial sea.
- Unlike the territorial sea, the contiguous zone **only gives jurisdiction to a state on the ocean's surface and floor**. It does not provide air and space rights.

Exclusive Economic Zone (EEZ):

- Each coastal State may claim an EEZ beyond and adjacent to its territorial sea that extends seaward **up to 200 nm from its baselines**.
- Within its EEZ, **a coastal state has:**
 - Sovereign rights for the purpose of exploring, exploiting, conserving and managing natural resources, whether living or nonliving, of the seabed and subsoil.

- Rights to carry out activities like the production of energy from the water, currents and wind.
- Unlike the territorial sea and the contiguous zone, the EEZ only allows for the above-mentioned resource rights. It **does not give a coastal state the right to prohibit or limit freedom of navigation or overflight**, subject to very limited exceptions.

High Seas:

- The ocean surface and the water column beyond the EEZ are referred to as the high seas.
- It is **considered as "the common heritage of all mankind"** and is beyond any national jurisdiction.
- States can conduct activities in these areas as long as they are for peaceful purposes, such as transit, marine science, and undersea exploration.

CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS (CMS)

Context: An article in the Indian Express provides data from **the State of the World's Migratory Species report** regarding the Convention on the Conservation of Migratory Species of Wild Animals (CMS).



About the CMS:

- CMS also referred to as the **Bonn Convention**, is an environmental treaty under the aegis of the **United Nations Environment Programme**.
- It was signed in Bonn, Germany, on 23 June 1979.
- It provides a global platform for the **conservation and sustainable use of migratory animals** and their habitats.
- CMS is the **only global and UN-based intergovernmental organisation** established exclusively for the conservation and management of terrestrial, aquatic and avian migratory species throughout their range.
- The parties to the convention acknowledge the **importance of conserving migratory species**, and the need to pay special attention to species whose conservation status is unfavorable.
- Activities by CMS Parties may range from legally binding treaties (called Agreements) to less formal instruments, such as Memoranda of Understanding.
- The **Conference of Parties (COP)** is the decision-making organ of this convention.
- CMS has **two Appendices**. These appendices list migratory species to which the Convention applies.

- **Appendix I** lists endangered migratory species and includes prohibitions regarding the take of these species.
- **Appendix II** lists species that have an '**unfavourable conservation status**' (as per the conditions set out in the Convention) and encourages range states to draft range-wide agreements for conservation and management of these species.

India and CMS:

- India has been a **party to the CMS since 1983**.
- India has also signed **non-legally binding MOU with CMS** on the conservation and management of **Siberian Cranes (1998), Marine Turtles (2007), Dugongs (2008) and Raptors (2016)**.

ASIAN DEVELOPMENT BANK

Context: ADB warned that India's crude oil reserves might leave the country vulnerable to supply chain disruptions through Strait of Hormuz amid ongoing war in West Asia.



About the Asian Development Bank:

- It is a **multilateral development bank established on 19th December 1966**.
- It is the principal international development finance institution for the Asia-Pacific region.
- It envisions a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while

sustaining its efforts to eradicate extreme poverty in the region.

- Headquarters: Manila, Philippines.
- In terms of financial commitments to members that are developing countries, **India ranks first with 14% of the bank's financial commitment**, followed by China, Bangladesh, the Philippines, and Pakistan.

Functions:

- It provides assistance to its developing member countries, the private sector, and public-private partnerships through grants, loans, technical assistance, and equity investments to promote social and economic development.
- ADB maximizes the development impact of its assistance by facilitating policy dialogues, providing advisory services, and mobilizing financial resources through cofinancing operations that tap official, commercial, and export credit sources.
- The Bank focuses on six key areas that align with the UN's Sustainable Development Goals (SDGs): education, health, transport, energy, finance, and climate change.
- The ADB also works in partnership with NGOs and private companies to improve capital markets and the business infrastructure of developing countries in the region.

Membership:

- Membership in the ADB is **open to members and associate members** of the **United Nations Economic Commission for Asia and the Far East**.
- It's also open to other regional countries and non-regional developed countries that are members of the U.N. or of any of its specialized agencies.
- From 31 members at its establishment in 1966, ADB has grown to encompass **69 members**, including 49 regional members

from Asia and the Pacific, such as India, China, Japan, South Korea, Australia, and many others, and **20 non-regional members** from Europe, North America, and other regions.

Governance:

- It is operated by a Board of Governors, which is composed of one representative from each member state.
- The Board then votes to choose 12 of their members to serve as the Board of Directors, with eight members coming from members from the Asia and Pacific region and the other four from non-regional members.
- The Board of Governors is also responsible for electing a president who serves a five-year term as the chairperson of the Board as well as being responsible for the bank's operations.
- Because Japan founded the ADB and remains the **largest shareholder of the bank**, every single president of the ADB has been from Japan.
- The ADB was **modelled closely on the World Bank and has a similar weighted voting system** where votes are distributed in proportion to members' capital subscriptions.
- ADB's **five largest shareholders are Japan and the United States (each with 15.6% of total shares), the People's Republic of China (6.4%), India (6.3%), and Australia (5.8%).**
- It raises capital regularly through the international bond markets.
- The ADB also relies on member contributions, retained earnings from lending, and the repayment of loans for the funding of the organization.

LINE OF ACTUAL CONTROL

Context: As much as 72% of China's Xiaokang villages along the Line of Actual Control has been constructed across the

northeastern states, of which 90% have been built across Arunachal Pradesh.



About Line of Actual Control:

- The LAC is the **demarcation** that separates Indian-controlled territory from Chinese-controlled territory.
- It is divided into **three sectors**: the eastern sector which spans Arunachal Pradesh and Sikkim, the middle sector in Uttarakhand and Himachal Pradesh, and the western sector in Ladakh.
- India considers the LAC to be **3,488 km** long, while the Chinese consider it to be only around **2,000 km**.
- The LAC is **not India's claim line**.
- India's claim line is the line seen in the official boundary marked on the maps as released by the Survey of India, including both Aksai Chin and Gilgit-Baltistan.
- In China's case, LAC is the claim line except in the eastern sector, where it claims the entire Arunachal Pradesh as South Tibet.

Disagreements on LAC:

- The western sector of the LAC is heavily contested.
- Here, the LAC emerged from two letters written by Chinese PM Zhou Enlai to PM Jawaharlal Nehru in 1959, after he had first mentioned such a 'line' in 1956.
- After the 1962 War, the Chinese claimed they had withdrawn to 20 km behind the LAC of 1959, which coincides with the so-called **McMahon Line** in the eastern sector.

Indian Response to China's Designation of the LAC:

- India rejected the concept of LAC in both 1959 and 1962, as it is the line China has created.
- The Chinese line was a disconnected series of points on a map that could be joined up in many ways.
- India wants the line to omit gains from aggression in 1962 and base it on the actual position on September 8, 1962 before the Chinese attack.
- During the Doklam crisis in 2017, the Chinese Foreign Ministry spokesperson urged India to abide by the '1959 LAC'.

Current scenario:

- India formally accepted the **concept of the LAC** when the Indian PM paid a return visit to Beijing in 1993 (after Chinese Premier Li Peng's 1991 visit to India).
- The two sides signed the **Agreement to Maintain Peace and Tranquility** at the LAC.
- The reference to the LAC was unclear on whether it referred to the LAC at the time of the one identified in 1959 or 1962.
- To reconcile the differences about some areas, the Joint Working Group on the border issues has been assigned the task of clarifying the alignment of the LAC.

Legacy Issues of Depsang Plains and Demchok:

- The **Depsang Plains** are located close to the strategically important Daulat Beg Oldie.
- The Depsang Plains issue began in 2013 when China carried out an 18-km incursion in the area.
 - Despite the two countries agreeing then to go back from their positions, the PLA troops did not vacate the area completely.
- In **Demchok**, which is in the southern part of eastern Ladakh, the problem is mainly at the Charding Ninglung Nullah (CNN) junction.

- In multiple instances, the PLA also stopped Indian graziers at the Saddle Pass at the CNN junction, well within India's perception of the LAC.

Present agreement:

- The Union government has announced that India and China have reached an agreement on patrolling arrangements and the resolution of the military standoff at the LAC, including Depsang and Demchok.



LAC v LoC

- The LoC emerged from the 1948 ceasefire line negotiated by the UN after the Kashmir War.
- It was designated as the LoC in 1972, following the Shimla Agreement between the two countries (India and Pakistan).
- It is delineated on a map signed by DGMOs of both armies and has the international sanctity of a legal agreement.
- On the other hand, the LAC is only a concept. It is not agreed upon by the two countries, neither delineated on a map or demarcated on the ground.

BRICS

Context: Efforts to build a consensus within the BRICS on the ongoing conflict in the Gulf has been slow.



About BRICS:

- BRICS is an acronym for the grouping of the world's leading emerging economies, namely **Brazil, Russia, India, China and South Africa**.
- BRICS accounts for 45% of the world's population and 37.3% of global GDP, surpassing the EU's 14.5% and the G7's 29.3%.
- **2025 Summit (17th):** Rio de Janeiro, Brazil.
- India has assumed the BRICS Chair position and host the **18th summit in 2026**.

Evolution:

- The acronym "BRICS" was coined in **2001** by Goldman Sachs **economist Jim O'Neill**. He projected that Brazil, Russia, India, and China would be among the world's largest economies in the next 50 years or so.
- As a formal grouping, BRIC started after the meeting of the leaders of Russia, India and China in Russia on the margins of the **G8 Summit in 2006**.
- The first BRIC Summit was held in Yekaterinburg, Russia, in 2009.
- **South Africa** was invited to join BRIC in December 2010, after which the group adopted the acronym BRICS.
- BRICS has been envisaged as a grouping of non-Western countries, which can act as a **counterweight to institutions like the World Bank and the International Monetary Fund**, dominated by the Global North.
- In 2023, during the **15th BRICS Summit**, held in South Africa, six countries were invited to join the alliance: Iran, the United Arab Emirates, Saudi Arabia, Argentina, Egypt, and Ethiopia.
- In January 2024, BRICS admitted four new members: **Egypt, Ethiopia, Iran and the United Arab Emirates**.
- In January 2025, **Indonesia** has become the 10th member of BRICS.

- Saudi Arabia has accepted the invitation but delayed formal joining.
- Argentina, whose new President Javier Milei is more pro-West, declined to join.
- Belarus, Bolivia, Kazakhstan, Cuba, Nigeria, Malaysia, Thailand, Vietnam, Uganda, and Uzbekistan were welcomed as **BRICS partner countries** in 2025.

Important initiatives:

- **New Development Bank:** To fund infrastructure and sustainable development projects in BRICS countries and other emerging economies. Headquartered at **Shanghai**.
- **Contingent Reserve Arrangement:** To provide financial support through liquidity and precautionary instruments in response to actual or potential short-term balance of payments pressures.
- BRICS Science, Technology, and Innovation Framework Programme
- BRICS Vaccine Research and Development Centre

GULF COOPERATION COUNCIL (GCC)

Context: The Iran war is causing delays to the proposed FTA between India and the Gulf Cooperation Council.

About the Gulf Cooperation Council:



About Gulf Cooperation Council:

- The GCC was established in Riyadh, Saudi Arabia, **in May 1981**.
- It is a political and economic alliance of **six Middle Eastern countries**.
- **Members:** Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman.

Objective:

- The purpose of the GCC is to achieve unity among its members based on their common objectives and their similar political and cultural identities, which are rooted in Arab and Islamic cultures.
- The **Presidency** of the council rotates annually.

Organizational structure:

- **Supreme Council:** It is the highest authority of the organization.
 - It is composed of the **heads of the Member-States**.
 - Its presidency rotates periodically among the Member States in alphabetical order.
- **The Ministerial Council:** It is composed of the **Foreign Ministers** of all the Member States or other ministers deputizing for them.
 - It meets **every three months** to implement the decisions of the

Supreme Council and to propose new policy.


- **The Secretariat General:** It is the administrative arm of the alliance, which monitors policy implementation and arranges meetings.

PARTNERSHIP FOR INDO-PACIFIC INDUSTRIAL RESILIENCE (PIPIR)



- It is a multilateral initiative aimed at **strengthening supply chains and industrial resilience** in the Indo-Pacific region.
- It was launched in May 2024 by the **USA** under the Indo-Pacific Economic Framework for Prosperity (**IPEF**).
- It aims to **reduce over-dependence on a single country for critical goods** and promote trusted and transparent supply chains.
- It also aims to **strengthen industrial cooperation** and crisis response mechanisms; and **encourage investment and capacity building** in partner countries.
- It comprises of **16 members**:
 - USA, Australia, Japan, South Korea, Philippines, Singapore, New Zealand, Italy, Canada, Germany, Lithuania, Thailand, Netherlands, Norway, Sweden, UK.

- **Taiwan** participates in an advisory capacity.
- **India is not a formal member** but is frequently referenced in US statements for potential bilateral or project-based cooperation.

 The Indo-Pacific Economic Framework (IPEF) is a U.S.-led initiative focusing on four pillars: Trade, Supply Chains, Clean Economy, and Fair Economy. India has joined Pillars II, III, and IV, focusing on supply chain resilience, sustainability, and anti-corruption, while maintaining observer status in Pillar I (Trade) due to concerns over environmental/labor standards.

GLOBAL INITIATIVE ON THE TAKING OF MIGRATORY SPECIES (GTI)



- It is a collaborative global effort **under the Convention on the Conservation of Migratory Species of Wild Animals (CMS) (also called the Bonn Convention)** to address the drivers of illegal and unsustainable taking.
- It is launched during the **15th Meeting of the Conference of the Parties (COP15)** to the Convention on the Conservation of Migratory Species of Wild Animals (CMS) in Campo Grande, Brazil.
- It aims to **provide coordinated support to CMS parties and fill longstanding gaps in global conservation efforts**, and is expected to equip countries with the tools, partnerships and knowledge required to

safeguard migratory species from this growing threat.

- **Meaning of Illegal and/or Unsustainable Taking:** Illegal and/or unsustainable taking refers to the removal of wild animals from nature in ways that are prohibited under the Convention and/or exceed the level of taking that can be sustained by species populations.
- The initiative is being launched together with partner organizations whose work is directly relevant to addressing these challenges – the **Convention on Biological Diversity (CBD)**, **BirdLife International**, the **Global Initiative to End Wildlife Crime**, **Wildlife Conservation Society (WCS)**, **World Wide Fund for Nature (WWF)** and **TRAFFIC**.

INVESTMENT FACILITATION FOR DEVELOPMENT AGREEMENT



- India, along with South Africa, Türkiye, and around 37 other countries, raised strong **objections at the World Trade Organization (WTO) against the China-backed Investment Facilitation for Development (IFD) Agreement.**
- It is a **plurilateral WTO initiative proposed by China** to streamline bureaucratic procedures and enhance the transparency of investment rules to make it easier to attract global FDI. It focuses on administrative reforms and cooperation.

- This means it **would be legally binding only on the WTO members who voluntarily accept** and ratify it, rather than the entire WTO membership.
- India views this plurilateral push as a **threat to the consensus-based, member-driven nature of the WTO**, allowing groups to bypass broader membership agreement.
- China claims that the agreement explicitly excludes controversial issues like market access, investment protection, investor-State dispute settlement (ISDS), and government procurement (such as India's MSP).
- India argues that the **investment facilitation is a "non-mandated, non-multilateral issue"** and its inclusion within the WTO framework **undermines the organisation's established mandate** to regulate global trade in goods, services, and intellectual property.
- India argues that expanding the WTO's mandate to govern foreign direct investment (FDI) without a unanimous multilateral mandate **violates the Marrakesh Agreement of the WTO.**

Economy

STRATEGIC PETROLEUM RESERVES

Context: India's strategic petroleum reserves (SPRs), are currently holding just about two-thirds of their total storage capacity.

- **Commercial oil stocks** by public and private oil marketing companies (OMCs).
- **Strategic reserves** by ISPRL for emergencies.
- **Oil assets abroad** via bodies like ONGC Videsh Ltd. (OVL).

- Unlike commercial stocks, **SPRs are stored in underground rock caverns**, which are safer, more secure, and suited for long-term preservation.

Current SPR Infrastructure in India:

- India has three active SPR sites: **Visakhapatnam** (Andhra Pradesh), **Mangalore** (Karnataka), and **Padur** (Karnataka)
- The combined SPR capacity is roughly **39 million barrels**. This can meet about **8 days** of India's daily oil requirement (5 million barrels/day).
- These strategic stocks are **separate from commercial stocks held by companies** like IOCL, HPCL, and BPCL.

Planned Expansion of SPRs in India:

- India aims to **double SPR capacity** due to rising geopolitical risks and import dependence.
- **New SPR locations** are planned at:
 - **Chandikhol** (Odisha) – 4 MMT (two separate projects)
 - **Padur Phase II** (Karnataka) – 2.5 MMT
 - **Mangalore SEZ** (Karnataka)
 - **Bikaner** (Rajasthan).
- After expansion, India's total SPR stock will **cover around 22 days** of national demand.

Strategic Petroleum Reserves



About Strategic Petroleum Reserves (SPRs):

- SPRs are **emergency stockpiles of crude oil** maintained by the union govt. to **manage supply disruptions** caused by events like wars, embargoes, or price shocks.
- It aims to ensure national **energy security** and reduce **vulnerability to external supply shocks**.
- India realized the need for SPRs after the **1990 Gulf War**, which caused supply cuts and spiking oil prices and ultimately led to a Balance of Payment (BoP) crisis in India.
- The **SPR project began in the early 2000s** based on advice from the Planning Commission's Integrated Energy Policy.
- In 2004, the union govt. set up the **Indian Strategic Petroleum Reserves Limited (ISPRL)** as a Special Purpose Vehicle run by the **Oil Industry Development Board (OIDB)** under the Ministry of Petroleum & Natural Gas.
- India currently has a **three-pronged oil security framework**:

- The long-term objective is to build up 90 days of oil reserves, in line with International Energy Agency (IEA) guidelines.

INFLATION TARGETING

Context: The Union Govt. has requested the RBI to target retain inflation at 4% (with a +/- 2% margin) for another 5 years.



About Inflation Targeting in India:

- Inflation targeting is a monetary policy in which a **central bank sets an explicit target for rate of inflation** and adjusts its policy instruments, such as interest rates, to achieve it.
- **New Zealand pioneered** inflation targeting in 1990, and it has since become widely adopted worldwide.
- In India, **Flexible Inflation Target (FIT)** framework was adopted in 2016.
- RBI has set an **inflation target of 4% with a tolerance band of +/- 2%** with regards to the Consumer Price Index (CPI). This means that RBI aims to keep inflation at 4% but will tolerate inflation between 2% to 6%.

Monetary Policy Committee (MPC):

- It was set up consequent to **Monetary Policy Framework Agreement (2015)** between Union Govt and RBI to task RBI with the responsibility for price stability and inflation targeting.

- **RBI Act, 1934 was amended and by virtue of Section 45ZB**, Union Govt constitutes a six-member MPC. Thus, the MPC is a statutory body.
- Union Govt determines the inflation target **in terms of Consumer Price Index, once in every five years** in consultation with the RBI.
- Composition: Section 45ZB says the MPC shall consist of **6 members**:
 - RBI Governor as its ex officio chairperson,
 - Deputy Governor in charge of monetary policy
 - An officer of RBI
 - 3 persons appointed by Govt.
- Members of MPC **hold office for a period of four years and are not eligible for re-appointment**. The MPC is required to meet at least four times in a year, although in practice, they meet six times a year.

Wholesale Price Index (WPI)

- ✓ It measures changes in **prices of goods sold and traded in bulk** by wholesale businesses to other businesses.
- ✓ Released by Office of Economic Adviser, **Ministry of Commerce & Industry** on a monthly basis.
- ✓ Base year: 2011-12

Consumer Price Index (CPI)

- ✓ Measures price change from point of view of a retail buyer. It is released by **National Statistical Office (NSO)**.
- ✓ Calculates price change of **services and commodities** such as food, medical care, education, housing, fuel, etc.
- ✓ Has several sub-groups including food and beverages, fuel and light, housing and clothing, bedding and footwear.
- ✓ Four types of CPI are as follows:
 - CPI for Industrial Workers
 - CPI for Agricultural Labourer
 - CPI for Rural Labourer

- CPI (Rural/Urban/Combined)

- ✓ Of these, first 3 are compiled by Labour Bureau. Fourth is compiled by NSO.
- ✓ Base Year for the CPI is 2024 (was revised in Feb 2026).

INDEX OF INDUSTRIAL PRODUCTION

Context; The data on the Index of Industrial Production for February, released by the Ministry of Statistics and Programme Implementation shows some interesting trends in the manufacturing sector

About the Index

- The Index of Industrial Production (IIP) is a key statistical tool used to **measure the short-term changes in the volume of production in Indian industries.**
- It provides insight into the **growth or contraction of industrial activity over a given period**, making it a crucial economic performance indicator.
- The IIP is published by the **National Statistics Office (NSO)**, which is part of the **Ministry of Statistics and Programme Implementation (MoSPI).**
- The current base year for the index is **2022-23**. This base year was adopted to reflect modern industrial structure and production patterns, following periodic revisions from earlier base years such as 1937, 1946, 1951, 1956, and so on.
- Sectoral Composition of IIP (Weight-wise):
 - **Manufacturing**
 - **Mining**
 - **Electricity**

List of Eight Core Industries (Weight in IIP: 40.27%) in decreasing order of weightage:

- Refinery Products
- Electricity
- Steel
- Coal
- Crude Oil
- Natural Gas
- Cement
- Fertilizers

Art & Culture

MONUMENTS OF NATIONAL IMPORTANCE

Context: The Govt. recently issued a press release on the activities undertaken for conservation of monuments of national importance.



About Monuments of National Importance (MNI):

- MNIs in India are legally protected under the Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958.
- This act **empowers Union Govt. to declare** certain monuments as MNIs through official notifications in the Gazette of India.
- It mandates protection, preservation and maintenance of MNIs to ensure their integrity and authenticity for future generations.
- **Act empowers Union Govt. to appoint authorities**, such as Archaeological Survey of India (ASI), to oversee the protection and management of MNIs.

Key Features of MNI Protection:

- Act prohibits certain activities within the precincts of MNIs, such as construction, excavation, & removal of artifacts, without prior approval from the relevant authorities.

- Within a 100-meter radius of the monument, construction activities are **prohibited** to prevent encroachment & damage. An additional 200-meter radius (100 + 200 meters) constitutes a regulated area where construction is subject to specific regulations to maintain the monument's surroundings.
- The Act requires the **maintenance of records and registers** documenting the history, conservation, and management of MNIs.

Process of Monument Delisting:

- Once delisted, monuments are no longer subject to ASI conservation efforts, allowing for regular construction activities in the vicinity.
- **Section 35 of the AMASR Act empowers the Union Govt. to delist of monuments** deemed to have lost national importance.
- The delisting process involves official notifications, with a 2-month public feedback period to address objections.

AMASR Act 1958:

- ✓ It provides for:
 - Preservation of monuments, archaeological sites & remains of national importance, which are over 100 years old
 - Regulation (of archaeological excavations)
 - Protection (of sculptures, carvings and other like objects.
- ✓ Archaeological Survey of India (ASI) functions under this act.
- ✓ ASI currently has 3,675 monuments under its purview.

NATIONAL MISSION FOR MANUSCRIPTS (NMM)

Context: Recently, a two-day conservation workshop was successfully conducted under the National Manuscripts Mission.



National Mission for Manuscripts

About National Mission for Manuscripts (NMM):

- It is an initiative of the **Ministry of Culture** to preserve and document India's vast collection of manuscripts.
- It was **launched in 2003** to document, conserve, and make accessible India's manuscript heritage.
- The **Indira Gandhi National Centre for the Arts (IGNCA)** serves as nodal agency for implementation of NMM.
- It is dedicated to conserving manuscripts and disseminating the knowledge contained in them, working toward its motto "conserving the past for the future."
- **Scope and Collection:** India possesses an estimate of **5 million manuscripts**, the largest collection in the world. **70% of these are in Sanskrit.**
- **Achievements of NMM:** Between 2003-24, metadata of 52 lakh manuscripts have been prepared, over 3 lakh titles have been digitized and 1/3 of them have been uploaded.
- **Concerns:** Only about 70,000 of the 1.3 lakh uploaded manuscripts are accessible. A significant portion of manuscripts is


privately owned, with limited incentive for owners to make them publicly accessible.

Revived NMM (2025 Budget):

- **National Manuscripts Authority:** The Union Ministry of Culture plans to form an autonomous body named National Manuscripts Authority. This will take NMM away from the IGNCA.
- **Future Roadmap:**
 - Establish **university chairs abroad in departments** that focus on ancient Indian studies.
 - **Involving IPR (intellectual property rights) and legal experts to address issues** related to sale of manuscripts abroad and private ownership.
 - Preserving **non-Brahmi and lesser-known scripts.**

Gyan Bharatam Mission (2025 Budget):

- It was **launched under NMM** to survey, document, and conserve India's vast manuscript heritage.
- It seeks to **conserve over one crore manuscripts** housed in academic institutions, museums, libraries, and private collections.
- To accommodate this initiative, the **budgetary allocation** for NMM has increased from **3.5 crore to 60 crore.**

 The NMM defines a manuscript as a handwritten work created on materials such as paper, bark, cloth, metal, or palm leaf, and it must be at least 75 years old. Lithographs (rocks) and printed volumes are not manuscripts.

KAMAKHYA TEMPLE



- It is situated on Nilachal Hill and adjoins the southern bank of the Brahmaputra River in Guwahati, Assam.
- The temple is dedicated to Goddess Sati, an incarnation of goddess Durga and the consort of Lord Shiva.
- It is one of the most revered centres of Tantric practices.
- It is regarded as one of the oldest of the 51 Shakti Peethas in India.
- The former temple was destroyed by Kala Pahar, which was later reconstructed in 1565 by Chilarai, who was the reigning king of the Koch dynasty.
- **Ambubachi Mela** is one of the major festivals of this temple. The festival is held every year to commemorate the yearly menstruation of Goddess Kamakhya

Kamakhya Temple Architecture

- It had been modelled out of a combination of two different styles, namely, the traditional Nagara, or North Indian, and Saracenic, or Mughal style of architecture.
- This unusual combination has been named the **Nilachala Style of Architecture**.
- It has a unique structural style that is shaped in the form of a beehive surrounded by different sculptures of different gods.

- This is the only temple of Assam having a fully developed ground plan.
- It consists of five chambers, garbhagriha or sanctuary, antarala or vestibule, Jagan Mohan or principal chamber, bhogmandir or ritual chamber and natmandir or opera hall for performing traditional dance and music associated with sukti temples.
- It is interesting to note that the superstructure of each of the above chambers exhibits different architectural features.

SAVITRIBAI PHULE

Context: December 10th has been celebrated as the death anniversary of Sri Savitribai Phule.



About Savitribai Phule:

- Savitribai Phule was a social reformer from 19th century Maharashtra who fundamentally

transformed Indian society by challenging patriarchal and caste hierarchies.

- She was born on **3rd January 1831** in **Satara (Maharashtra)** into the Mali community and married at the age of 9 to Jyotiba Phule.

Contributions:

- In 1848, she made history by founding **India's first Indian-run girls' school in Pune**, alongside her husband.
- The couple collectively established and ran 18 schools.
- She helped establish trusts like the **Native Female School, Pune** and the **Society for Promoting the Education of Mahars, Mangs and Etceteras**, directly challenging caste-based discrimination.
- In 1852, she founded the **Mahila Seva Mandal** to raise awareness for women's rights, campaigning against child marriage and advocating for widow remarriage.
- In 1863, the couple, founded the **Balhatya Pratibandhak Griha**, recognized as India's first home to combat female infanticide and provide shelter to pregnant Brahmin widows and rape victims.
- She institutionalized social equality by initiating the **first Satyashodhak marriage**—a dowry-free, priest-free, and non-Brahminical ceremony—to subvert caste and patriarchal norms.
- A poet and author, her notable works include **Kavya Phule (1854)** and **Bavan Kashi Subodh Ratnakar (1892)**.
- Her famous poem, "Go, Get Education," encouraged the oppressed castes to break the shackles of slavery.
- She faced extreme orthodox opposition, enduring social assaults and being stoned. She died in 1897 after contracting the bubonic plague while selflessly caring for a patient.

MAHAD SATYAGRAHA

Context: The historic Mahad Satyagraha marks its 99th anniversary and the beginning of its centenary year on 20th March 2026.



About Mahad Satyagraha:

- In 1923, social reformer **S.K. Bole** passed a resolution in the **Bombay Legislative Council** mandating that **public water sources, wells, and dharamshalas be opened to the Depressed Classes**.
- The **Mahad Municipal Council** adopted this resolution in 1924, but severe **resistance from dominant-caste Hindus** prevented the Depressed Classes from actually accessing the town's Chavdar Tale (Chowder Tank).
- In response, the Mahad Satyagraha was launched under **Dr. B.R. Ambedkar** to assert the legal and moral right of Dalits to access the Chavdar Tank.

Events of the Mahad Satyagraha (1927):

- **March for Dignity (1927):** On 20th March 1927, Dr. B.R. Ambedkar led a peaceful march to the Chavdar Tank and drank water from it, breaking a centuries-old caste taboo and asserting equality.
- **Violent Backlash:** Upper-caste groups attacked protestors amid rumours of temple entry. The tank was symbolically "purified"

with cow dung and urine, reflecting caste prejudice.

- **Burning of Manusmriti:** Dr. Ambedkar planned a second Satyagraha in December 1927 but was blocked by a court injunction filed by upper-caste Hindus claiming the tank was private property.
- Ambedkar did not access the tank again but **burned the Manusmriti, rejecting caste ideology.**
- **Legal Victory (1937):** After a decade-long struggle, the Bombay High Court ruled in favor

of Dr. Ambedkar, legally opening the tank to all communities.

- March 20 is now officially observed across India as **Social Empowerment Day** to commemorate this landmark movement led by Dr. B.R. Ambedkar in 1927.

Environment

WILDLIFE PROTECTION ACT OF 1972

Context: World Wildlife Day was recently commemorated on March 3 and the Union Govt. held a series of events to mark the occasion.



About the Wildlife Protection Act of 1972 (WPA):

- It provides a legal framework for the protection of various species of wild animals and plants, management of their habitats, regulation, and control of trade in wild animals, plants, and products made from them
- **India's entry to CITES** (Convention on International Trade in Endangered Species of Wild Fauna and Flora) was made easier by the Wildlife Act.

Authorities Appointed under WPA:

- Union Govt. appoints **Director of Wildlife Preservation.**
- State Govts appoint **Chief Wildlife Warden (CWLW)**
- States are also entitled to appoint **Wildlife Wardens in each district.**

Salient Features of WPA

- Prohibits hunting of animals listed in Schedules I to IV. Can be hunted after getting permission from CWLW if it:
 - becomes dangerous to human life or to property or crops
 - is disabled or suffering from a disease beyond recovery.
- **Both union and state govts.** can declare areas as **national parks or wildlife sanctuaries.**

Bodies Constituted under WPA

- **National Board for Wildlife (NBWL):** Apex body for review of all wildlife-related matters & approving projects in/around NPs and Ws. Chaired by PM. Board is only advisory in nature
- **Standing Committee of NBWL:** For approving all projects falling inside or within 10 kms of protected areas. Chaired by Environment Minister.
- **State Board for Wildlife (SBWL):** CM is chairperson. Advises state govt in selecting & managing protected areas.
- **Central Zoo Authority (CZA):** Chaired by Environment Minister. Recognises & regulates zoos across the country.
- **National Tiger Conservation Authority (NTCA):** Chaired by Environment Minister. Recommends to state govt. to declare an area as Tiger Reserve.
- **Wildlife Crime Control Bureau (WCCB):** To combat organized wildlife crime.

Schedules under the Act:

- **Schedule I** for animal species with highest level of protection.
- **Schedule II** for animal species with lesser degree of protection.
- **Schedule III** that covers plants.

- **Schedule IV** for specimens listed in Appendices under CITES

Culling of animals under the Act:

- **Section 62** of the Act allows the **Union Govt to declare** any animal (**except those in Schedule I**) as **vermin** for a specified area and time period.
- **States send a formal request** to the Ministry of Environment, Forest and Climate Change (MoEFCC).
- If justified, the Union Govt. notifies the species as vermin for a specific region and time frame.
- This declaration is **not permanent** and applies only to the **area and time as mentioned in the notification**.
- Examples: Wild boar in Uttarakhand, Nilgai (blue bull) in Bihar, and Rhesus monkeys in Himachal Pradesh.

Other Features

- Union Govt. can regulate and prohibit **import of invasive alien species**.
- Union and state govts. have power to declare **community reserves**.
- State govts. may declare areas adjacent to national parks and sanctuaries as **conservation reserve**.
- Allows persons to surrender captive animals or animal products to CWLW. No compensation will be paid for this.

AMUR FALCON



- It is a **migratory raptor of the falcon family**. It is known by a few other names, such as Eastern Red-footed Falcon, Eastern Red-footed Kestrel, Manchurian Falcon, & Red-legged Falcon

Distribution

- **They breed in southeastern Siberia and Northern China and migrate long distances in large flocks to winter in Southern and East Africa.**
- Along the way, large numbers pass through India, with the biggest congregations seen in the northeastern states. It undertakes the longest regular overwater passage of any raptor.

Features

- It is an average-sized falcon, with a wingspan of 63–71 cm and weighing about 120 g.
- The male and female are distinctly different.
- The male is a dark, sooty grey, with brownish-red thighs and vent.
- When flying, a white lining of the male's wings stands out against the sooty grey.
- The female has a pattern common among many falcon species, with a dark spotted chest and vent against a white background and a darker, grey back.

- A distinctive feature of both the male and the female is the orange of the eye-ring, beak base (the cere) and feet.
- As in many birds of prey, the male is smaller than the female.
- In addition to speed and strength, these birds are known to have keen eyesight for detecting prey from a distance or during flight.
- It is classified as '**Least Concern**' under the IUCN Red List

NILGIRI WOOD PIGEON



- It is a species of pigeon **endemic to the Western Ghats in India**.
- **Appearance:** They are best identified in the field by their large size, dark colours and the distinctive checkerboard pattern on their nape.
- **Habitat:** It inhabits high-elevation wet evergreen forest, moist evergreen and semi-evergreen forest, including densely wooded ravines and hollows known as 'sholas'.
- It occurs primarily in foothills and mountains, up to 2,250 metres above sea level.
- **Distribution:** It is mainly found in regions such as the Nilgiris and Anamalai Hills in Tamil Nadu and Kerala. Isolated populations

are also reported from locations such as the Biligirirangan Hills, Nandi Hills, and northern Maharashtra.

- **Diet:** They are mainly frugivorous and forage in the canopy of dense hill forests.
- **Threats:** These are threatened by hunting, deforestation, agricultural and infrastructure expansion, plantation development and climate change

Conservation Status

- IUCN: Least Concern
- Wild Life Protection Act: Schedule-I

KOALAS



- It is an iconic **Australian animal**.
- Often called the koala "bear," this tree-climbing animal is a marsupial—a mammal with a pouch for the development of offspring.
- It is the only extant representative of the family Phascolarctidae, and **its closest living relatives are the wombats**

Habitat and Distribution

- The koalas live in **eastern Australia and range from northern Queensland to southwestern Victoria**.
- Koalas are **arboreal**, remaining mostly in the branches of the eucalyptus trees, where they are able to feed and stay out of reach of their predators.
- The **koala is confined to eucalyptus** forests below 600 m.

Features

- It is about 60 to 85 cm long and weighs up to 14 kg in the southern part of its range (Victoria and South Australia) but only about half that in subtropical Queensland to the north.
- In both areas, they exhibit sexual dimorphism, with the males being larger.
- Virtually tailless, the body is stout and gray, with a pale yellow or cream-coloured chest and mottling on the rump.
- The broad face has a wide, rounded, leathery nose, small yellow eyes, and big fluffy ears.
- The feet are strong and clawed.
- They are slow-moving and sleep up to 18 hours a day
- It is classified as **'Vulnerable'** under the IUCN Red List

SAMBAR DEER



- It is a **large deer native to the Indian Subcontinent, southern China and Southeast Asia.**
- Several races of sambar are recognized, among them the **large Indian sambar and the smaller Malayan sambar.**

Habitat and Distribution

- They are native to India, Pakistan, Ceylon, Sri Lanka, Burma, the Philippines, southern

China, Taiwan, Borneo, Malaysia, Sumatra, and Java.

- Sambars inhabit both gently sloping and steep forested hillsides.
- They reside preferably near cultivated areas, such as gardens and plantations, in order to acquire food, but are also found in thick forests, swamp forests, and open scrub.

Features

- A large, relatively long-tailed deer, it stands 1.2–1.4 m (47–55 inches) at the shoulder.
- It is the largest oriental deer, with some adult males reaching 550 kg in weight.
- Its body is covered with a hairy coat that is colored yellowish brown to dark gray.
- Its underside is usually dark or chestnut in color.
- Its hairs are generally long and more so around the neck particularly in males.
- It has a long black tail. The underside of this tail is usually white in color.
- Males have antlers and tend to be heavier and darker. Their antlers can grow up to 42 inches long and have 3 or 4 tines (points) and are shed periodically.
- It is classified as **'Vulnerable'** under the IUCN Red List.

THE OARFISH

- The oarfish is commonly known as the **"doomsday fish"**.
- It is a deep-sea dweller that rarely comes near the surface.
- **Habitat:** They are deep-sea dwellers, thriving most often in the zone least explored by scientists to date: the mesopelagic zone (waters down to 1,000 meters).

Features

- It is known for its **long, ribbon-like body that enables the species to float**

inconspicuously throughout the water column.

- It also boasts large eyes and foreboding red spines that stick out to form a crown-like cluster.
- Oarfish can reach up to 30 feet (about 9 metres) long, making them the longest bony fish known to exist in the ocean.
- They float vertically and use their reflective bodies as a type of camouflage.
- It is a filter feeder and primarily eats krill, plankton, and other small crustaceans.
- In some areas of the world, these creatures are seen as being harbingers of bad news, particularly disasters or destruction.



NATIONAL CHAMBAL SANCTUARY



- **Location:** It lies at the tri-junction of three states Madhya Pradesh, Uttar Pradesh and Rajasthan.

- It is also called the **National Chambal Gharial Wildlife Sanctuary**.
- It is a tri-state protected riverine sanctuary along 425 km length of the **Chambal River and ravines**.
- The main focus of the sanctuary is to protect the critically endangered Gharial, Red-crowned roof turtle & endangered Ganges dolphin.
- It supports the largest population of **Gharials** in the wild.
- It is listed as an important bird area (IBA).
- **Topography:** The topography is full of ravines, hills & sandy beaches.
- **Vegetation:** It is part of the Kathiar-Gir dry deciduous forest ecoregion.
- **Fauna:** It is home to mugger crocodile, smooth-coated otters, Striped Hyena & Indian wolves are also found here.
 - It also supports Indian narrow-headed soft-shell turtles, three- striped roof turtles & crowned river turtles.

NATIONAL TIGER CONSERVATION AUTHORITY

Context: The National Tiger Conservation Authority said that cheetahs travelling from the Kuno National Park in Madhya Pradesh to Rajasthan were showing natural territorial behaviour.



About National Tiger Conservation Authority:

- It is a **statutory body** under the **Ministry of Environment, Forest, and Climate Change (MoEFCC)**.
- It was **established in 2006** under **Wildlife (Protection) Act 1972**.

Objectives:

- Providing **statutory authority to Project Tiger** so that compliance of its directives becomes legal.
- Fostering accountability of Center-State in management of Tiger Reserves by providing a basis for MoU with States within the federal structure.
- Providing for an **oversight by Parliament**.
- **Addressing livelihood interests of local people** in areas surrounding Tiger Reserves.

NTCA Composition:

- Minister in charge of MoEFCC (as Chairperson),
- Minister of State in MoEFCC (as Vice-Chairperson),
- three members of Parliament, the Secretary (MoEFCC), and other members.

Tiger

- Royal Bengal Tiger (**Panthera Tigris**) is the **National animal of India**.

Habitat: Tropical rainforests, evergreen forests, temperate forests, mangrove swamps, grasslands, and savannas.

Countries Where Tiger Population Is Found:

- Found only in **13 Tiger Range countries** – India, Nepal, Bhutan, Bangladesh, Myanmar, Russia, China, Thailand, Malaysia, Indonesia, Cambodia, Laos, and Vietnam.
- As per the latest report by IUCN, the **tiger has gone extinct in Cambodia, Laos, and Vietnam**.

Protection Status:

- **IUCN Red List:** Endangered
- **CITES:** Appendix I
- **WPA 1972:** Schedule I

Conservation Efforts

- **International Big Cats Alliance (IBCA):** For conservation of seven big cats, namely Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, and Puma (Launched by India)
- **Tx2 campaign:** Launched by WWF; stands for 'Tiger times 2', signaling the goal to **double the tiger population by 2022**.
- **Project Tiger:** Launched in 1973
- **Tiger Census:** Every 4 years

Threats: Habitat loss, Poaching and illegal trade, Human-Wildlife conflict

Tigers In India

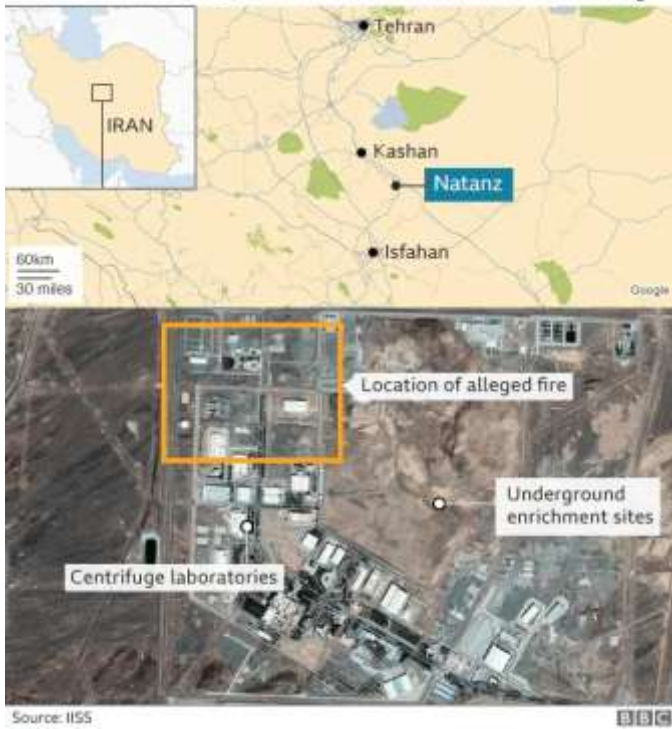
- India has the **largest population**
- Largest population has been found in Central Indian Highlands & Eastern Ghats Landscape
- **Tiger Reserves:** India now has **57 tiger reserves**
- Ratapani Tiger Reserve in Madhya Pradesh is the latest.
- Nagarjunsagar (Andhra Pradesh) is the largest, while Bor (Maharashtra) is the smallest.

NATANZ

- Located in Iran's central Isfahan province in **Tehran**, Natanz hosts the country's **main uranium enrichment facility**.
- It is known as the **first Pilot Fuel Enrichment Plant of Iran**.
- **Fordow Fuel Enrichment Plant (FFEP)** is Iran's second pilot enrichment plant.
- It is **among the sites monitored by the International Atomic Energy Agency (IAEA)** after Iran's 2015 nuclear deal with world

powers i.e. the USA, UK, France, China, Russia, and Germany.

Incident at Natanz uranium enrichment facility



Source: IIS

DIEGO GARCIA



- It is a **coral atoll** located in the central Indian Ocean.
- It is the **largest and southernmost member of the Chagos Archipelago.**

- It is part of the **British Indian Ocean Territory (BIOT)** and accounts for more than half the land area.
- It was discovered by the Portuguese in the early 16th century, it was for most of its history a **dependency of Mauritius.**
- In 1965 it was separated from Mauritius as part of the newly created BIOT.
- In 1966, the **UK leased Diego Garcia to the US to create an air and naval base.** For constructing the defence installation, the inhabitants of the island were forcibly removed.
- Diego Garcia is the **United States' major geostrategic and logistics support base** in the Indian Ocean.
- In 2025, the UK reached a **historic agreement to transfer sovereignty to Mauritius,** following decades of disputes.

CUBA



- It is the **largest island country located in the north western Caribbean** at the confluence of the Atlantic Ocean, Caribbean Sea and the Gulf of Mexico.
- Cuba shares its maritime borders with the **US, Haiti, Honduras, The Bahamas, Jamaica and Mexico.**

- **Water bodies:** It is surrounded by the Atlantic Ocean, Cayman Trench, Gulf of Mexico, Straits of Florida and the Caribbean Sea.
- Capital City: **Havana**.
- Topography: **It is relatively flat, gradually transitioning into hills.**
- **Climate:** In Cuba, the climate is tropical, with a dry and relatively cool season from late November to mid-April, and a rainy and muggy season from late April to early November.
- Mountain ranges: **Sierra Maestra**.
- River: The country's longest river is the **Cauto**.
- Lakes and Reservoirs: **Laguna de Leche** and man-made **Zaza Reservoir**
- Natural Resources: Cuba has plenty of natural resources such as **nickel, cobalt, petroleum, arable land, forests.**

STEPPE EAGLE



- It is a member of the subfamily Aquilinae, also known as the “**booted eagles**”.
- The Steppe eagle is a **large, bulky, and robust-looking eagle**. It is mainly **dark brown in color** with a longish but very thick neck and a relatively small head
- It is found in a number of habitats including **steppe, desert, semi-desert, open savanna, pastures, agricultural fields, paddy fields, grassland, and open woodland.**

- It is mainly found in **Europe, Asia, and Africa**
- It is a specialized predator of ground squirrels on the breeding ground.
- **It is the only eagle to nest primarily on the ground.**
- It mainly breeds in central Asian countries, including Kazakhstan, Russia, and Mongolia, it undertakes an **annual southward migration as temperatures drop.**
- Steppe eagles are carnivores and prey mainly on small-sized mammals, with some birds (such as queleas) and reptiles and
- The major threats to the Steppe eagle include habitat loss, persecution, wildfires, predation (and trampling by cattle) of chicks.
- **IUCN Red List: Endangered**

JUNGLE CAT



- The Jungle cat (*Felis chaus*) is a medium-sized cat.
- Its name comes from the **Caucasus Mountains**, the place this cat was first discovered.
- Other names: Swamp Cat, Reed Cat

Appearance

- It is long-legged and is the **largest of the extant Felis species**. Females tend to be smaller and lighter than males.
- It has a white muzzle, yellow irises, large ears ending in black tufts, and the sometimes-faint striping on its long legs.
- **Habitat:** These are found across diverse habitats, from grasslands and wetlands to deserts.
- **Distribution:** They're present across Asia, with large populations in India and Nepal.
- It is also found in **Egypt, and throughout southwest Asia, southeast Asia, and Central Asia, extending its range as far as the south of China**.
- It avoids dense forests and heavily-modified landscapes, **preferring agro-pastoral and open habitats**.
- It is **not nocturnal and does much of its hunting in the early mornings and late afternoons**.
- **Diet:** It is a carnivorous creature and mostly prey on rodents, lizards, frogs, snakes and livestock.

Conservation Status

- IUCN Red List: Least concern'
- Wildlife (Protection) Act 1972: Schedule II

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Science & Technology

NATIONAL POLICY ON BIOFUELS

Context: In the wake of the recent war in Iran and disruption of crude oil supplies, there have been calls to scale up production of biofuels.



About the National Policy on Biofuels (2018):

- It expands the scope of raw material for ethanol production by allowing use of sugarcane juice, sugar containing materials like sugar beet, sweet sorghum, starch containing materials like corn, cassava, damaged food grains like wheat, broken rice, rotten potatoes, unfit for human consumption for ethanol production.
- Instead of initial deadline of 2030, in 2022, the govt. has announced ethanol-petrol blending target of 20% (E20) by 2025.
- The policy promotes production of biofuels under Make in India by units located in SEZs.
- The policy grants permission for export of biofuels in specific cases.
- The National Biofuel Coordination Committee (NBCC) headed by the Prime Minister has been constituted for providing high-level co-ordination, policy guidance and review on different aspects of biofuel research and development.

- The policy categorizes biofuels into:
 - Basic biofuels – 1st Gen (1G) ethanol produced from food crops.
 - Advanced biofuels – 2nd Gen (2G) ethanol – from food waste and Municipal Solid Waste (MSW).
 - 3rd Gen Biofuels – produced from microbes and algae.
 - 4th Gen Biofuels – produced from genetically modified algae.
- The policy only promotes the use of 2nd, 3rd and 4th Gen biofuels.

Related Initiatives

- ✓ **Pradhan Mantri JI-VAN Yojana:**
 - To create an ecosystem for setting up commercial projects and to boost R&D in 2G Ethanol sector.
- ✓ **GOBAR (Galvanizing Organic Bio-Agro Resources) DHAN scheme:**
 - Managing and converting cattle dung and solid waste in farms to useful compost, biogas and bio-CNG.
 - Unified Portal for GOBARdhan was launched in June 2023 to ease setting up of biogas plants.
- ✓ **Sustainable Aviation Fuel (SAF):**
 - Aims to achieve 1% SAF blend by 2025, requiring 140 million litres of SAF per year.
- ✓ **Global Biofuel Alliance:**
 - Launched by USA, Brazil and India during the G20 Summit in September 2023.
 - Aims to ease cooperation and intensifying use of sustainable biofuels, with a specific focus on the transport sector.
- ✓ **Tax Benefits:**
 - Lower taxes are levied on E10 and E20 blends compared to unblended petrol.
 - Lower excise duty and GST rates for ethanol compared to petrol.

SHESHNAAG-150



- It is a **long-range collaborative attack swarm drone**, with autonomous systems capable of deep strikes and saturation attacks.
- It is being developed by **NewSpace Research and Technologies (NRT)**, a Bengaluru-based aerospace startup focusing on AI-driven unmanned systems and swarm robotics.

Features

- Weighing about **150 kg**, Sheshnag can carry **25-40 kg** payload which is sufficient to damage infrastructure, military vehicles or personnel.
- What sets it apart is its **AI-powered swarm tech** — multiple drones can team up autonomously to evade defenses and hit targets together.
- It has an operational range of over **1,000 km**.
- It can stay airborne for over **five hours**, enabling it to loiter over target areas before executing an attack.
- It is equipped with real-time surveillance, autonomous target identification, and strike capabilities.
- It has the ability to operate in GPS-denied environments using visual navigation systems. This ensures that the drone can still reach targets even if satellite navigation signals are jammed during warfare

DART MISSION



- DART (Double Asteroid Redirection Test) was a NASA space probe **dedicated to investigating and demonstrating one method of asteroid deflection by changing an asteroid's motion in space through kinetic impact**.
- It was launched on November 24, 2021.
- It was the **first-ever space mission to demonstrate asteroid deflection by a kinetic impactor**.
- It was the **world's first planetary defense technology demonstration**.
- It was aimed at finding out whether or not we could redirect the trajectory of a near-Earth object simply by crashing into it.
- The target of DART was a binary asteroid system consisting of a smaller moonlet, Dimorphos, orbiting around a larger asteroid, Didymos.
 - Because the two were linked by gravity, the theory went, knocking little Dimorphos off-kilter would affect both objects.
- DART spacecraft successfully collided with **Dimorphos** on 26 September 2022.
 - Weighing in at over 1,000 pounds, the spacecraft's collision with Dimorphos was as energetic as an explosion of over three tons of TNT.
 - DART's collision shortened the orbit of the asteroid by around 33 minutes.

- The collision also slightly altered the orbit of the Didymos system around the Sun.
- Researchers found that the solar orbital period changed by about 0.15 seconds.
- The mission was a success. **For the first time, humans have successfully demonstrated the ability to change the motion of an asteroid in space.**

PROBA-3 MISSION



- It is the **European Space Agency's (ESA) first mission dedicated to precision formation flying.**
- It is the innovative mission which will demonstrate precision formation flying between two satellites to create an artificial eclipse, revealing new views of the Sun's faint corona.
- **Objective:** To create an artificial eclipse by precisely coordinating two independent satellites. This capability will enable scientists to observe the Sun's corona, a region typically obscured by the intense brightness of the Sun.
- It consists of **two small satellites — a Coronagraph spacecraft and a solar-disc-shaped Occulter spacecraft.**

Working

- By flying in tight formation about 150 metres apart, the Occulter will precisely cast its

shadow onto the Coronagraph's telescope, blocking the Sun's direct light.

- This will allow the **Coronagraph to image the faint solar corona in visible, ultraviolet and polarised light for many hours at a time.**
- It will provide new insights into the origins of coronal mass ejections (CMEs) — eruptions of solar material that can disrupt satellites and power grids on Earth.
- The mission will also measure total solar irradiance, tracking changes in the Sun's energy output that may influence Earth's climate.

KC 135 STRATOTANKER

- The **Boeing KC-135 Stratotanker** is a critical, **long-range aerial refueling tanker operated primarily by the United States Air Force (USAF).**
- It was designed to transfer fuel to bombers, fighters, and surveillance aircraft in mid-air, significantly extending their operational range and endurance.



Key Facts

- **Role:** Aerial refueling and airlift (sometimes called a "flying gas station").
- **Manufacturer:** Boeing (developed from the Boeing 367-80 prototype, alongside the 707 airliner).
- **Operational History:** Entered service in 1957, making it one of the oldest and longest-

servicing aircraft in the US military (over 60 years).

- **Crew:** Typically consists of three members: Pilot, Co-pilot, and Boom Operator.
- **Capability:** Can carry roughly 200,000 pounds of fuel for offloading and up to 83,000 pounds of cargo.
- **Fuel System:** Uses a "telescoping boom" to transfer fuel. Some variants (KC-135R/T) can also refuel two aircraft simultaneously using wing pods.
- **Upgrades:** Most were re-engined with CFM-56 turbofans to improve fuel efficiency (25% more efficient than original models).
- **Replacement:** The KC-135 is being gradually replaced by the **Boeing KC-46 Pegasus**.
- **The Indian Air Force (IAF) has engaged in wet-leasing a KC-135 Stratotanker** from a U.S. company named Metrea to bridge training gaps for its pilots, especially as the current Russian-origin Ilyushin Il-78MKI tankers age and require replacement.

TOMAHAWK MISSILES

- It is an **American-made long-range subsonic cruise missile used for deep land attack warfare**.
- It is launched from ships or submarines through a Vertical Launch System.
- The Tomahawk was first conceptualized in the early 1970s as a Cold War-era weapon.
- Developed by General Dynamics and later Raytheon, it entered service in 1983.
- Tomahawks were first deployed in combat during **Operation Desert Storm in 1991**

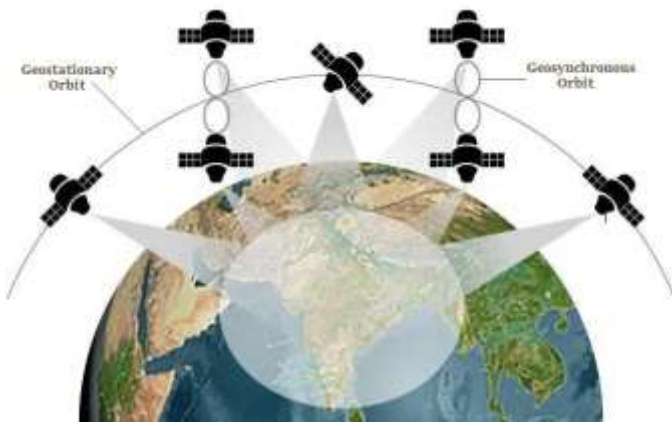


Features

- It measures 18.3 feet in length and weighs about 3,200 pounds (4,400 with booster).
- It can carry a 1,000-pound conventional warhead or cluster munitions.
- It is powered by a **solid propellant during its launch phase. Thereafter, it is powered by a turbofan engine that does not emit much heat, which makes infrared detection difficult.**
- They cruise at subsonic speeds of 880 kmph and fly as low as 30-50 metres to avoid radar detection.
- Tomahawks are **guided by advanced GPS, inertial navigation, and terrain contour mapping.**
- This **makes them highly accurate-with a margin of error of just 10 meters.**
- They are **built to follow a non-linear path, reducing the chance of interception.**
- It has a range of up to approximately **2,400 km.**
- Each Tomahawk missile reportedly costs around **\$2 million.**

NAVIC SATELLITE SYSTEM

Context: The last atomic clock aboard the Indian Regional Navigation Satellite System (IRNSS) has failed, the ISRO said in a statement.



About NavIC Satellite System:

- IRNSS is an independent regional navigation satellite system being developed in India by the Indian Space Research Organization (ISRO).
- IRNSS envisages the establishment of a regional navigational satellite system using a combination of geosynchronous orbit (GEO) and geostationary orbit (GSO) spacecraft and state-of-the-art ground systems.
- **Area covered:** IRNSS-NavIC is designed to provide accurate position information service to users in India and the region extending up to 1500 km from its boundary, which is its primary service area.
- An extended service area lies between the primary service area and the area enclosed by the rectangle from latitude 30° South to 50° North and longitude 30° East to 130° East.
- **IRNSS-NavIC network:** NavIC is designed with a constellation of seven satellites and a network of ground stations operating around the clock.
 - Three satellites are placed in GSO.
 - Four satellites are placed in inclined GEO.
 - The ground network comprises a control Centre, accurate timing facility, range and integrity monitoring stations, two-way ranging stations, etc.
- **IRNSS services:** IRNSS will provide two types of services, namely:
 - Standard Positioning Service (SPS) – that is provided to all users.
 - Restricted Service (RS) – an encrypted service provided only to authorised users.

- The signals of the other global navigation satellite systems (GNSS), including GPS, GLONASS, Galileo, and BeiDou provide interoperability with those of the NavIC SPS signals.
- **Frequency band:** The seven satellites in the NavIC constellation so far use two frequencies for providing positioning data the L5 and S bands.
- **Accuracy:** The IRNSS System is expected to provide a position accuracy of better than 20 m in the primary service area.

Atomic Clock

- ✓ It is a device that **measures time using the vibrations of atoms**.
- ✓ It specifically uses the oscillations of the electrons in atoms to keep time.
- ✓ It is the **most accurate time-keeping device available**, with a margin of error of just a few billionths of a second per day.
- ✓ It is far more precise than conventional clocks because atomic oscillations have a much higher frequency and are much more stable.

Working:

- ✓ Atomic clocks work by using a type of atom called a **“cesium atom”**.
- ✓ Cesium atoms are very stable and have a very specific frequency at which their electrons vibrate.
- ✓ This frequency is used as the basis for the atomic clock’s timekeeping.
- ✓ To measure time using cesium atoms, an atomic clock uses a device called a **“microwave cavity”**.
- ✓ The microwave cavity is a chamber that is filled with cesium vapor.
- ✓ A microwave signal is then sent into the cavity, which causes the cesium atoms to

vibrate. As the cesium atoms vibrate, they emit radiation at a very specific frequency.

- ✓ This frequency is then detected by a detector, which compares it to a standard frequency.
- ✓ The difference between the two frequencies is used to adjust the clock's timekeeping.

Applications:

- ✓ **GPS systems:** GPS systems use atomic clocks to measure the time it takes for a signal to travel from a satellite to a receiver on Earth. This allows GPS systems to calculate the receiver's location with great accuracy.
- ✓ **Telecommunications networks:** Telecommunications networks use atomic clocks to synchronize the timing of signals that are sent over long distances.
- ✓ **Scientific research:** Atomic clocks are used in many scientific experiments that require precise timing, such as studies of the behavior of atoms and molecules.

BIOPHARMA SHAKTI SCHEME

Context: The BioPharma Shakti Scheme has the potential to improve biologics ecosystem in India.



About Biopharma Shakti Scheme:

- Biopharma **SHAKTI** (Strategy for Healthcare Advancement through Knowledge, Technology & Innovation) is designed to develop India into a global **biopharmaceutical manufacturing hub**.

- This will build the ecosystem for domestic **production of biologics and biosimilars**.
- It will include a Biopharma-focused network with **3 new National Institutes of Pharmaceutical Education and Research (NIPER)** and upgrading 7 existing ones.
- It will also create a **network of over 1000 accredited India Clinical Trials sites**.
- **Financial Outlay & Time Period:** ₹10,000 crore over the next five years.
- This initiative will catalyse investments in advanced biomanufacturing infrastructure, promote innovation and enhance India's capabilities in **high-value, next-generation therapies**.
- It will focus on building a **biopharma-centric innovation and manufacturing network**, responding to India's rapidly changing disease profile marked by a rising burden of **non-communicable diseases** such as diabetes, cancer and autoimmune disorders.

Biologics

- ✓ Biologics are **complex medicines derived from living organisms**.
- ✓ Their complex manufacturing processes have traditionally limited their availability, primarily serving high-income countries.

Biosimilars

- ✓ These are **highly similar versions of biologic medicines**, developed through comprehensive analytical studies and rigorous preclinical and clinical trials to ensure therapeutic equivalence.
- ✓ These products offer equally effective and safe alternatives thereby increasing market competition and reducing the costs of biologic therapies.

VAN ALLEN PROBE A

Context: NASA's 600kg Van Allen Probe A satellite is falling back to Earth, but experts say the risk to the public is extremely small.



About Van Allen Probe A:

- **NASA's Van Allen Probes** mission was the first mission to use **two spacecraft in tandem to study Earth's radiation belts**.
- Originally designed for a two-year mission, the Van Allen Probes A and B launched on Aug. 30, 2012, and gathered unprecedented data on Earth's **two permanent radiation belts** — **named for scientist James Van Allen** — for almost seven years.
- From 2012 to 2019, the spacecraft and its twin, Van Allen Probe B, flew through the **Van Allen belts, rings of charged particles trapped by Earth's magnetic field**, to understand how particles were gained and lost.
- The belts **shield Earth from cosmic radiation, solar storms, and the constantly streaming solar wind** that are harmful to humans and can damage technology, so understanding them is important.
- By having two spacecraft with identical instruments, with one followed by the other along nearly the same path, researchers could **measure changes that occur in Earth's radiation belts over time and through space**, providing insights into the physical dynamics of the radiation belts and changes that occur in this critical region of space.
- NASA ended the mission after the two spacecraft ran out of fuel and were no longer able to orient themselves toward the Sun.

Van Allen Radiation Belts

- ✓ The **Van Allen radiation belt** is a zone of **energetic charged particles**, most of which originate from the solar wind.

- ✓ The particles are **captured by and held around a planet by that planet's magnetic field**.
- ✓ It surrounds Earth, containing a nearly **impenetrable barrier** that prevents the fastest, most energetic electrons from reaching Earth.
- ✓ The **outer belt** is made up of billions of high-energy particles that originate from the Sun and become trapped in Earth's magnetic field, an area known as the **magnetosphere**.
- ✓ The **inner belt** results from **interactions of cosmic rays with Earth's atmosphere**.
- ✓ The Van Allen belts are **most intense over the Equator** and are **effectively absent above the poles**.

LARGE HADRON COLLIDER



- The LHC is a huge experiment that collides two beams of particles to study physics at very high energies. It's the largest science experiment in the world and is operated by **CERN (European Organisation for Nuclear Research)**
- The LHC is a circular pipe that is **27 km long and is located on the Franco-Swiss border near Geneva, Switzerland**.
- It consists of **two D-shaped magnetic fields created by almost 9,600 magnets**.

Working Mechanism:

- Protons, which are subatomic particles made up of **quarks and gluons, are accelerated inside the LHC** using these magnets.
 - Quarks and gluons are subatomic particles that **make up protons and neutrons**. Quarks come in six different "flavors": up, down, charm, strange, top, and bottom. Gluons are particles that "glue" **quarks together inside protons and neutrons** through the strong nuclear force.
 - **Protons are not the only particles accelerated in the LHC.**
- By switching the direction of the magnetic field rapidly, **protons can be accelerated through the beam pipe.**
- Other components help to focus the particles and keep them from hitting the pipe's walls.
- The protons eventually move **at 99.999999% of the speed of light.**

Significance:

- At such high energies, the **LHC can create conditions that existed only fractions of a second after the Big Bang.**
- Scientists use detectors placed along the beam pipe to observe the **interactions of the accelerated particles**, which can reveal new insights into the nature of matter and the universe.
- The LHC has already **discovered the Higgs boson in 2012 and confirmed their findings in 2013**, which is a particle that gives other particles mass.
- The LHC also helps to **test theories in particle physics**, such as supersymmetry and extra dimensions.

ITER TOKAMAK

- The International Thermonuclear Experimental Reactor (ITER) is a

collaboration of **35 nations** launched in **1985.**

- It is located in **France.**
- It aims to build the **world's largest tokamak** to prove the **feasibility of fusion** as a **large-scale and carbon-free** source of energy.
- The **tokamak** is an experimental machine designed to harness the energy of fusion. Inside a tokamak, the energy produced through the fusion of atoms is absorbed as heat in the walls of the vessel. Like a conventional power plant, a fusion power plant uses this heat to produce steam and then electricity by way of turbines and generators.
- The project is based on **fusion** which is also an **energy source** for the **Sun and stars.**
- Every fusion reaction in the Sun, in which two hydrogen atoms fuse into one helium atom, releases two **neutrinos.**

**Significance:**

- ITER will be the **first fusion device** to maintain **fusion for long periods** of time and also to **test the integrated technologies**, materials, and physics regimes necessary for the commercial production of fusion-based electricity.

Participation:

- The ITER members include **China, the European Union, India, Japan, South Korea, Russia and the United States.**

- According to the **ITER Agreement (2006)**, the above mentioned seven members will share the cost of project construction, operation and decommissioning.
- They also share the experimental results and any intellectual property generated by the fabrication, construction and operation phases.

ITER and India

- India is a key partner in the ITER project, contributing approximately 9%–10% of the costs and critical "in-kind" technology to the world's largest fusion experiment.
- ITER-India, a specialized team under the Institute for Plasma Research (IPR), delivered major systems, including the massive 30-meter-high Cryostat, cryolines, cooling water systems, and Radio Frequency (RF) heating components.

Key Components Supplied by India:

- **Cryostat:** Manufactured by L&T, it is the world's largest stainless-steel vacuum chamber, acting as a refrigerator for the tokamak.
- **Cryogenic Systems:** India designed and delivered the cryolines and associated cooling systems to keep the superconducting magnets at a frigid
- **In-Wall Shielding:** Protects the vacuum vessel from high-energy neutrons, a vital safety component.
- **Cooling Water Systems:** Manages the immense heat generated during fusion.
- **Heating Systems:** Supplies Ion-Cyclotron and Electron Cyclotron systems, as well as Diagnostic Neutral Beam systems, to achieve plasma temperatures exceeding 150 million

- **Diagnostics and Power Supplies:** Provides critical systems for monitoring and powering the reactor.

LIDAR BUOY SYSTEM



- It is a **high-tech ocean-based instrument used to measure wind conditions over the sea.**
- It combines a floating platform (buoy) with LiDAR technology, short for Light Detection and Ranging.
- It uses **laser pulses to measure atmospheric conditions with high precision.**
- **Purpose:** It is designed to measure wind profiles and atmospheric conditions over the ocean. It can track wind speed and direction and changes in wind at different heights.

Working of the System

- The system uses **LiDAR (Light Detection and Ranging) technology.**
- The buoy in this float on the ocean surface and emits laser pulses into the atmosphere.
- These pulses bounce back after hitting particles in the air and the returned signals

are analyzed to measure wind movement and patterns.

- This allows scientists to gather highly accurate, real-time data from areas where traditional instruments may struggle.
- Unlike traditional instruments, this buoy can capture detailed wind data up to 300 meters above sea level.
- **Significance:** Better weather prediction, improved storm and cyclone tracking and understanding climate change impact will help scientists to know how the sea works.

SWOT SATELLITE

Context: Recently, NASA has developed a new map of the ocean floor by using satellite data from SWOT Satellite.

- The satellite circles Earth and can scan about 90 per cent of the planet every 21 days.
 - It is equipped to observe the entire length of nearly all rivers wider than 330 feet and more than 1 million lakes and reservoirs larger than 5 acres.
 - It will precisely measure fine differences in surface elevations around smaller currents and eddies, where much of the oceans' drawdown of heat and carbon is believed to occur.
- The **Surface Water and Ocean Topography (SWOT)** satellite was launched in 2022.
 - It is a joint mission of **NASA and CNES (French Space Agency)**.
 - Satellite will collect detailed measurements of how water bodies on Earth change over time.
 - **Features SWOT Satellite**
 - It uses a specialised instrument called the **Ka-band Radar Interferometer (KaRIn)** to measure the height, width, and elevation of surface water bodies such as rivers, lakes, reservoirs, and oceans.
 - SWOT offers high spatial resolution by bouncing microwaves off water surfaces and calculating return time, allowing dynamic water movement tracking.
 - The satellite covers over 55% of large-scale global floods during their lifecycle through frequent Earth orbits.

Places in News and Geography

BELARUS



- Belarus is a **landlocked Eastern European** country. It is bordered by **Russia, Ukraine, Poland, Lithuania, and Latvia**.
- Its capital and largest city is **Minsk**.
- Languages: **Belarusian** (24%, official), **Russian** (70%, official).
- Relief: **Predominantly flat lowlands** with forest cover (~40%).
- Rivers: **Dnieper basin** dominates; along with the **Bug River**.
- **Climate: Cool continental** climate with Atlantic influence.
- It has been **independent since 1991**, and was formerly part of the Soviet Union (then known as Byelorussia).
- Belarus is a **close Russian ally**. Belarus serves as Russia's western frontier, a **buffer against NATO expansion**, and a

critical participant in regional security, energy transit, and military cooperation.

SAHYADRI TIGER RESERVE



- The Union Environment Ministry has approved the capture and translocation of eight tigers from Tadoba-Andhari and Pench reserves to the Sahyadri Tiger Reserve.
- It is located in **Sahyadri Ranges of Western Ghats in Maharashtra**. It combines the **Koyna Wildlife Sanctuary** and the **Chandoli National Park** in southern Maharashtra.
- This region includes the area around the **Koyna Dam, Warna River** and many other small rivers originating from the Western Ghats and flowing eastwards.
- **Evergreen, semi-evergreen, & moist deciduous** forests are present throughout the area.
- The most distinct feature of the area is the presence of numerous barren rocky and **laterite plateaus called "Sadas"**, with less perennial vegetation and overhanging cliffs running along its edges.

SHENDURNEY WILDLIFE SANCTUARY



- Shendurney Wildlife Sanctuary is located in the **Kollam district of Kerala**. It is a **part of the Agasthyamalai Biosphere Reserve**.
 - **Fauna:** Tiger, Gaur, Sambar Deer, Elephant, Sloth Bear, Lion-tailed Macaque, Malabar Raven, Malabar Banded Swallowtail, etc.
- This sanctuary **derives its name from Chenkurinji** (*Gluta travancorica*), a flowering tree species endemic to this region of the Western Ghats.
- **Tropical evergreen and semi-evergreen forest** cover a major area of the sanctuary.
- The sanctuary has an artificial lake of nearly 18.69 km² area and also surrounded by the reservoir of **Thenmala Dam**.
- The **first eco-tourism project in India, Thenmala Eco-tourism Project** was formulated in and around the Shendurney Wildlife Sanctuary in the 1980s.

GABON



- Gabon is a country on the **Atlantic coast of Central Africa**.
- It is bordered by **Equatorial Guinea** and **Cameroon** to the north, the **Republic of Congo** to the east & south, and the **Gulf of Guinea** to the west.
- It has an area of 270,000 square kilometers and a population of 2.3 million people. **Libreville** is the country's capital and largest city.
- Gabon was **colonized by France** in the late 19th century. Since its independence in 1960, Gabon has **struggled with maintaining stable, democratic rule**.
- In the 1990s, Gabon introduced a multi-party system & a constitution that aimed for a more transparent election and reformed govt. institutions. Despite this, **in 2023, the military overthrew the elected govt.** and Gabon has been under military rule ever since.
- Gabon is a **developing country**, ranking 123rd in the Human Development Index.
- It is **one of the wealthiest countries in Africa** in terms of per capita income, mostly due to its **large petroleum reserves and investor-friendly policies**. It has the fourth highest HDI and the fifth highest GDP per capita of any African

nation. However, despite this, large parts of the population are still very poor.

- The official language of Gabon is **French**, and **Bantu ethnic groups** constitute around 95% of the country's population. **Christianity** is the predominant religion, practiced by 80% of the population.

JORDAN



- It is a country in West Asia situated at the crossroads of Asia, Africa and Europe **in the Levant region**.
- Jordan is bordered by **Saudi Arabia** to the south and east, **Iraq** to the northeast, **Syria** to the north, and **Israel, Palestinian West Bank, and the Dead Sea** to the west.
- The **Jordan River**, flowing into the Dead Sea, is located along the country's western border within the **Jordan Rift Valley**.
- **Amman** is the country's capital and largest city, as well as the most populous city in the Levant.
- It has a **very narrow coastline on the Gulf of Aqaba** in the **Red Sea** in the Southwest. The **Gulf of Aqaba separates Jordan from Egypt**.
- It is a **constitutional monarchy**, but the king holds wide executive and legislative powers.

ZAMBEZI RIVER



- It is the **fourth-longest river in Africa** (after Nile, Congo, Niger) and Africa's longest east-flowing stream.
- It starts off in Angola's southern highlands. It flows through **Angola, Zambia, Namibia, Botswana, Zimbabwe, and Mozambique**.
- The main tributaries of the Zambezi River include the Shire, Kafue, Luangwa, Kabompo, and Cuando (Kwando) rivers.
- The river is known for several notable waterfalls, including **Victoria Falls**, one of the world's largest waterfalls, and the **Chavuma Falls** on the Zambia-Angola border.
- **Major Dams:** Cahora Bassa & Kariba.
 - Lake Kariba, formed by the Kariba Dam's reservoir, is the world's largest artificial lake and reservoir by volume.
- It drains into the **Indian Ocean** via a 100-km-wide delta.

MALAWI



- India and Malawi held a bilateral meeting during the Bharat Electricity Summit 2026 in New Delhi to ease cooperation in the energy sector.
- Malawi, is a **landlocked country in Southeastern Africa**. It is bordered by **Zambia** to the west, **Tanzania** to the north and, and **Mozambique** to the east, south, and southwest.
- **Lilongwe** is its capital and largest city.
- In 1891, the area was **colonized by the British** and renamed Nyasaland in 1907. In 1964, it became independent and was renamed Malawi.
- **Lake Malawi (Lake Nyasa)** is the dominant geographical feature of the country, covering more than one-fifth of its total area. It is the **third-largest lake in Africa** and is located within the **East African Rift Valley**.
- The **Shire River** is the only outlet of Lake Malawi, and it flows south to join the Zambezi River in Mozambique.
- It has a **democratic, multi-party republic** headed by a President.
- It is one of the **world's least developed countries**. The economy is heavily based on agriculture, and it has a largely rural and growing population. The country has a **low**

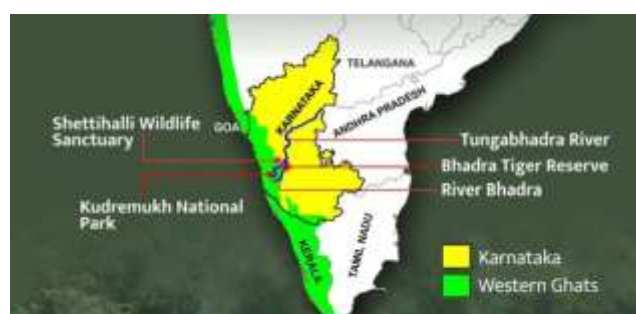
life expectancy and high infant mortality. HIV/AIDS is highly prevalent.

RAS LAFFAN AND SOUTH PARS GAS FIELDS



- **Ras Laffan** is the **world's largest Liquefied Natural Gas (LNG) export hub**, housing major liquefaction plants and export terminals.
 - It is located in **northeastern Qatar**, along the Persian Gulf coast.
 - It accounts for **nearly 20% of global LNG supply** and is the core operational center for Qatar's LNG exports.
- **South Pars Gas Field** is the **world's largest natural gas field**, shared between **Iran** (South Pars) and **Qatar** (North Field).
 - It holds one of the world's biggest proven natural gas reserves.

BHADRA TIGER RESERVE



- Karnataka has proposed a “soft-release” strategy to manage the escalating human-elephant conflict in Hassan, Chikkamagaluru, and Kodagu districts by **gradually rehabilitating captured elephants into the Bhadra Tiger Reserve.**
- It is located in the midst of the **Western Ghats region of Karnataka**, in the **Baba Budan hill ranges.**
- It hosts diverse forests, including Southern Moist Mixed **Deciduous Forests**, Dry Deciduous Forests, and **Shola Forests.**
- **Flora:** Teak, Rosewood, Mahogany and many medicinal plants
- **Fauna:** Tiger, Leopard, Leopard cat, Dholes, Indian Civet, Gaur, Sambar and Barking Deer
- It is **named after the Bhadra River**, which originates in within the tiger reserve. The **Bhadra meets the Tunga** River at Koodli, a small town near Shivamogga. The combined river **continues east as the Tungabhadra**, a major tributary of the **Krishna.**

LEBANON



- It is a country located on the **eastern shore of the Mediterranean Sea in Western Asia.**
- **Capital:** Beirut
- **Borders:** It borders the **Mediterranean Sea in the west, Syria in the north and east, and Israel in the south.**

History:

- It is part of an area known as the Fertile Crescent, also known as the “**Cradle of Civilization**”.
- **Byblos**, the oldest continuously inhabited city in the world, is around 30 km north of modern **Beirut.**
- Lebanon was ruled by a number of ancient empires, including the **Phoenician, Egyptian, Hittite, Babylonian, Persian, Greek, and Roman.**
- For over 400 years (1516-1918), Lebanon was part of the **Ottoman Empire.**
- In 1920, following the collapse of the Ottoman Empire, **Lebanon was ruled by France, which created the State of Greater Lebanon.**
- It wasn't until 1943 that Lebanon achieved independence after French authority dissolved, leading to the withdrawal of French troops.

Geography:

- It consists of a narrow strip of territory and is **one of the world's smaller sovereign states.**
- The **Lebanon Mountains**, which rise to 9,800 feet (3,000 meters), run down the middle of the country.
- The Anti-Lebanon Mountains form Lebanon's border with Syria.
- Between the two mountain ranges lies the high, fertile **Bekaa Valley.**
- The valley receives water from the Litani, the only river in Lebanon that flows throughout the year.
- **Climate:** Its Mediterranean climate brings mild, wet winters and hot, dry summers.

Political Structure:

- Lebanon is a unitary, multiparty republic with a **parliamentary system of government.**

- **Parliamentary seats are apportioned equally between Christian and Muslim groups.**
- This sectarian distribution is also to be observed in appointments to public office.
- **Languages:** Arabic (official), French, English, Armenian
- **People:** Most Lebanese are Arabs. There are small groups of Armenians and Kurds.
- **Economy:** Services, including banking and tourism, are Lebanon's most important economic activities

About Hezbollah

- Hezbollah ("Party of God") is a powerful **Shia Islamist terrorist group based in Lebanon, formed in 1982 with Iranian support to oppose Israeli presence.**
- It operates as a state-within-a-state, featuring a significant parliamentary wing and a well-armed paramilitary force, often considered **Iran's premier proxy.**

- **Iran is located on the north coast, while the UAE is on the south coast.**
- At its narrowest point, the Strait of Hormuz is only **29 nautical miles wide (54 km).**
- **Islands:** Some of the islands located in the Strait of Hormuz are Hengam, Hormuz, and Qishm.

Significance

- The Strait of Hormuz is considered one of the **world's most economically important choke points.**
- About 30% of the world's liquefied gas and 25% of oil pass through the Strait of Hormuz.
- It serves as a key passage for supertankers transporting oil and gas from Saudi Arabia, Kuwait, Iraq, Qatar, Bahrain, the UAE, and Iran.
- Most of this energy flows to Asian markets, including China, which remains Iran's sole significant oil customer.

STRAIT OF HORMUZ



- It is a **narrow waterway between Iran and the Arabian Peninsula, specifically the United Arab Emirates, and Musandam (Oman).**
- The Gulf of Oman is on the strait's east, while the Persian Gulf is on the west.
- It is the **only sea channel linking the oil-rich Persian Gulf (west) with the Gulf of Oman and the Arabian Sea (southeast).**

SOLOMON ISLANDS



- **Location:** It is located in the **south-western Pacific Ocean**.
- The Solomon Islands are two parallel chains of volcanic islands and small coral atolls.
- These are situated to the **southeast of Papua New Guinea and to the northwest of Vanuatu**.
- Once a British protectorate, the Solomon Islands achieved independence as are public in 1978.
- **Capital:** Honiara which is located on Guadalcanal, the largest island.
- **Government:** It is a parliamentary democracy within the Commonwealth, with a unicameral Parliament and a ministerial system of government.

Geographical Features

- It consists of nearly 1,000 islands (6 large main islands and over 900 smaller islands), of which 147 are inhabited.
- **Topography:** The country is mainly mountainous and covered in forests, although it has some extensive plains.
- **Ethnic groups:** Melanesian 93%, Polynesian 4%, Micronesian 1.5%, other 1.5%.

MOZAMBIQUE

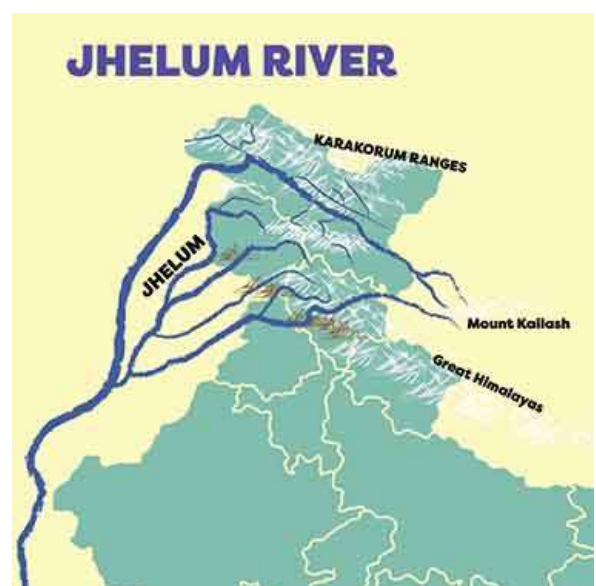


- **Location:** It is a country in **Southern Africa** and is located in the Southern and Eastern Hemispheres of the Earth.
- **Bordering countries:** Zimbabwe (west), Eswatini and South Africa (south and southwest), Zambia, Malawi (north west), and Tanzania (North).
- **Water Bodies:** It has a coastline on the **Indian Ocean to the east**.
- The island countries and territories of Madagascar, Comoros, and Mayotte are separated from Mozambique by the Mozambique Channel.
- **Capital City: Maputo**

Geographical Features

- **Climate:** The climate in most of Mozambique is tropical and warm.
- **Rivers:** The River Zambezi being the largest and other rivers are Limpopo, Licungo, Lurio, Rovuma etc.
- **Major Lakes:** Lake Malawi (Nyasa) is the country's major lake.
- **Highest Peak:** Mount Binga
- **Natural Resources:** The country's principal natural resources are natural gas, coal, mineral, sand, hydropower, and most likely oil

JHELUM RIVER



- It is an **important river that flows through northwestern India and eastern Pakistan.**
- It is a tributary of the Indus River.
- The river is also known as Vitasta in Sanskrit, Hydaspes in Greek, and Bidasp in Persian.
- It is the lifeline of Kashmir, the region where it flows for most of its course.
- It is the largest and most western of the five rivers of Punjab and passes through the Jhelum District in the North of Punjab province, Pakistan.

Course:

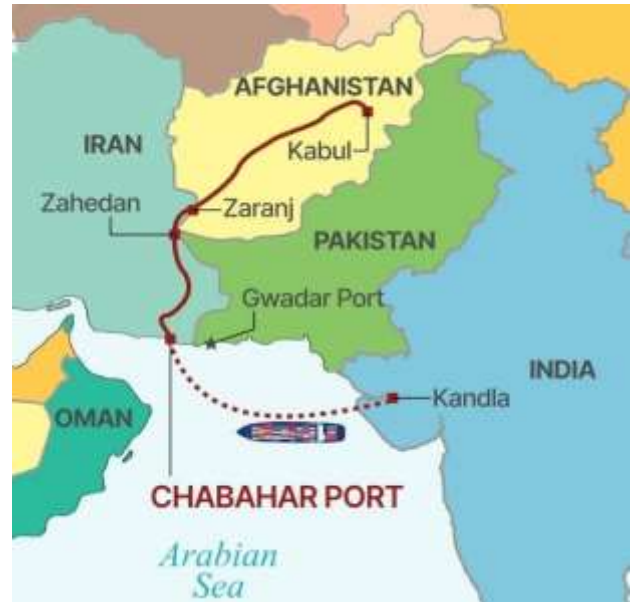
- It originates at the Verinag Spring at Anantnag, at the foot of the Pir Panjal range in the Kashmir Valley.
- The river meanders northwestward from the northern slope of the Pir Panjal Range through the Vale of Kashmir to Wular Lake at Srinagar, which controls its flow.
- The river makes a deep, narrow gorge on its way to Pakistan.
- **It joins the Chenab River near Trimmu, Pakistan.**
- Length: It has a total length of about 725 km.
- The hydrology of the Jhelum River is largely controlled by snowmelt from the Karakoram and Himalaya ranges in the spring and the southwest monsoon on the Indian subcontinent that brings heavy rains from June to September.

Major Tributaries:

- The largest tributary of the Jhelum is the Kishenganga (Neelum) River, which joins near Muzaffarabad and enters the Punjab province, Pakistan.
- The Kunhar River is the second largest tributary of the river, which connects Pakistan-occupied Kashmir (PoK) and Pakistan on the Kohala Bridge of the Kangan valley.

- Other tributaries include the Sandran River, Bringi River, Arapath River, Watlala River, Lidder River, and Veshaw River.

CHABAHAH PORT



- It is a deep-water **port located in Iran’s Sistan-Baluchistan province.**
- It is on the **Gulf of Oman at the mouth of the Strait of Hormuz.**
- It is the **only Iranian port having direct access to the Indian Ocean.**
- It consists of two separate ports called Shahid Beheshti and Shahid Kalantari.
- It’s geographic proximity to countries such as Afghanistan, Pakistan, and India, as well as its status as a key transit center on the burgeoning International North-South Transport Corridor (INSTC), gives it the potential to develop into one of the most important commercial hubs in the region.
- **The INSTC is a multi-modal transportation route linking the Indian Ocean and the Persian Gulf to the Caspian Sea via Iran, and onward to northern Europe via Saint Petersburg in Russia.**
- **Kandla port in Gujarat is 550 Nautical Miles from Chabahar port,** while the distance between Chabahar and Mumbai is 786 Nautical Miles.

Chabahar Project:

- In May 2016, India signed a tripartite agreement with **Iran and Afghanistan** to develop the Shahid Beheshti Terminal at Chabahar.
- In 2024, **India received a ten-year contract to develop and operate the port**
- The idea was that the port would enable India to bypass Pakistan and access Afghanistan, and ultimately Central Asia.
- Moreover, the port could serve as a hub for transit trade between India, Iran, and Afghanistan and provide an alternative route to the traditional Silk Road that passes through China.

DEENDAYAL PORT

- **Deendayal Port (previously called Kandla Port) is the second largest seaport of India**, situated in the Kachchh District of **Gujarat State** in western India.
- It is situated in the creek of Kandla, which is at a distance of 90 kms from the **Gulf of Kachchh**.
- It is a protected **natural harbor**.
- It is recognized as one of the **major ports** in India.
- It was constructed in the 1950s as the chief seaport serving western India after the partition of India from Pakistan left the port of Karachi in Pakistan.
- It is 256 nautical miles southeast of the Port of Karachi in Pakistan and over 430 nautical miles north-northwest of the Port of Mumbai.
- The port is specialized in handling bulk import and export cargo, including liquid cargo.
- It features 18 berths, including 12 dry cargo berths and 6 oil jetties, handling a wide range of cargo such as petroleum, chemicals, iron ore, salt, and containers.
- **It remains India's biggest state-owned cargo handler by volume, but it has**

steadily lost market share to privately owned Mundra Port (India's largest private port), 60 km to the southwest.

IRAQ



- **Location:** It is a Western Asian country.
- **Bordering Countries:** It is bordered by six nations: Iran to the East; Kuwait to the southeast; Turkey to the north; Syria to the west; Jordan to the southwest and Saudi Arabia to the south.
- **Maritime Border:** The country has a coastline along the northern end of the Persian Gulf.
- **Capital City:** Baghdad

Geographical Features of Iraq

- **Climate:** The climate in Iraq is mainly of the continental, subtropical semi-arid type, with the north and north-eastern mountainous regions having a Mediterranean climate.
- **Major Mountains:** Its most prominent hill range is the Sinjār Mountains, whose highest peak reaches an elevation of 4,448 feet (1,356 metres).
- **Major Rivers:** Two of the most significant rivers in all of Asia, the Euphrates and Tigris Rivers, drain the land.
- **Lakes:** Habbaniya and Razzaza
- **Desert:** Western and southern Iraq is a vast desert region.
- **Natural resources:** It mainly consists of Oil, natural gas, phosphates, and sulfur.

NIGERIA



- **Location:** It is a country located on the western coast of Africa. It is often called the “Giant of Africa.”
- **Boundaries:** It is bordered to the north by Niger, to the east by Chad and Cameroon, and to the west by Benin. It also has a coastline on the Gulf of Guinea.
- It is also **Africa’s most populous country**.
- **Capital:** Abuja

Geographical Features

- **Climate:** Nigeria has a diverse geography, with climates ranging from arid to humid equatorial.
- **Drainage:** The major drainage areas in Nigeria are the Niger-Benue basin, the Lake Chad basin, and the Gulf of Guinea basin.
- **River:** The Niger River, for which the country is named, and the Benue, its largest tributary, are the principal rivers.
- **Major Mountain Range:** Cameroonians Highlands
- **Natural Resources:** It has abundant natural resources, notably large deposits of petroleum and natural gas.
- **Security Crisis & Violence:** A “hydra-headed” security crisis persists with attacks from **Boko Haram, Islamic State (ISWAP)**,

and bandit groups, particularly in the North-East and North-West.

SOUTH SUDAN



- South Sudan, officially the Republic of South Sudan, is a landlocked country in East Africa
- **Independence:** Gained independence from Sudan on July 9, 2011, making it the world's newest country.
- **Borders:** Sudan (North), Ethiopia (East), Kenya, Uganda, and the Democratic Republic of the Congo (South), and the Central African Republic (West).
- **Major Rivers:** The **White Nile** flows through the country.
- **Sudd Wetland:** One of the world's largest freshwater wetlands is located in central South Sudan.
- **Capital:** Juba.
- **Ongoing Crisis;** Intense clashes between government-aligned forces (President Salva Kiir) and opposition factions (associated with Riek Machar) have intensified, particularly in Jonglei, Lakes, and Upper Nile States.

ETHIOPIA



- It is a **landlocked country in East Africa**.
- It occupies an area of 1,104,300 sq.km.
- It is the largest and most populated country located in the Horn of Africa.
- With the 1993 secession of Eritrea, its former province along the Red Sea, Ethiopia became landlocked.
- It is bordered by six countries. These are **Eritrea, Djibouti, Somalia, Kenya, South Sudan, and Sudan to the north, northeast, east, south, west, and northwest, respectively.**
- The political system in Ethiopia is Democratic Republic.
- **Capital:** Addis Ababa
- **Languages:** Afar, Amharic, Oromo, Somali, and Tigrinya.
- The country has one of the most rugged and complex topographies on the continent.
- The five major topographic features of the country are the Rift Valley, Western and Eastern Highlands, and Western and Eastern Lowlands.
- The North Central massifs of the country host the highest point in the country, marked by the yellow upright triangle. It is the 4,533 m high Mount Ras Dejen.
- The three main rivers in Ethiopia are the **Blue Nile, the Omo River, and the Awash River.**
- **Lake Tana**, one of Africa's most unique wetland ecosystems and the source of 50% of

Ethiopia's freshwater, is located in the northwest of the Ethiopian Highlands.

- Ethiopia was among the first independent nations to sign the Charter of the United Nations, and it gave moral and material support to the decolonization of Africa and to the growth of Pan-African cooperation.
- These efforts culminated in the establishment of the Organization of African Unity (since 2002, the African Union) and the United Nations Economic Commission for Africa, both of which have their headquarters in **Addis Ababa.**
- The Grand Ethiopian Renaissance Dam, formerly known as the Millennium Dam and sometimes referred to as the Hidase Dam, is a gravity dam on the **Blue Nile River in Ethiopia.**

BAGRAM AIR BASE



- Located about **60 km north of Kabul**, Bagram Airfield is **Afghanistan's largest military base**, positioned in the vital Parwan province.
- The province acts as a strategic gateway, with the **2.6 km Salang tunnel** linking **Kabul to Mazar-e-Sharif** and other northern cities.
- In addition, highways from Parwan connect Kabul to Ghazni and Kandahar in the south and Bamiyan in the west, making it central to Afghanistan's connectivity and control.

- **Historical Evolution:** The base was constructed by the Soviet Union in the 1950s and rose to prominence during the Cold War and the Soviet-Afghan War (1979–1989).
- Following the US-led invasion of Afghanistan in 2001, Bagram became the main operational hub for American forces, serving as a logistics, intelligence, and command centre throughout the War on Terror.
- **Strategic Significance:** Despite the withdrawal of US forces, Bagram continues to hold immense strategic value.
- Its location offers a vantage point over regional dynamics. With China building closer ties with the Taliban, the airbase's role gains new relevance.
- The significance is amplified by proximity to sensitive Chinese sites—**Lop Nur nuclear test site in Xinjiang** is just 2,000 km away, while the Koko Nur nuclear weapons facility lies further east in Qinghai province.

QATAR

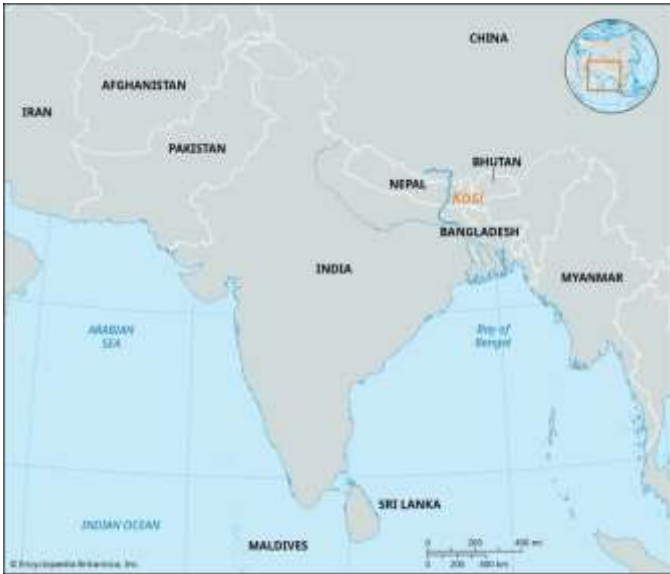


- It is located on the **northeastern coast of the Arabian Peninsula**.
- The Qatari peninsula extends about 160 km into the Persian Gulf.
- **Borders:** Qatar shares a **single land border with Saudi Arabia** to the south.
- It is **surrounded by the Persian Gulf on all other sides**.
- The **Gulf of Bahrain** separates it from Bahrain.
- **Capital:** Doha is the capital and largest city.

Topography:

- Qatar has a **mostly flat and barren desert landscape**.
- Sand dunes dominate the southern region, especially in Khor al Adaid or the Inland Sea.
- The north and west have rocky terrain with low limestone formations.
- **Salt flats** known as **sabkhas** are also present.
- **Major Mountain:** The highest point is **Qurayn Abu al Bawl** at 103 m in Jebel Dukhan.
- **Climate:** Qatar has a dry desert climate with sunshine all year.
- Winters are mild with an average temperature of 18.5°C in January.
- Summers are very hot and temperatures often reach 40°C.
- The country receives about 70 mm of rainfall annually.
- **Economy:** Qatar has a high-income economy largely dependent on oil and natural gas.
- Income from these resources and related industries accounts for more than 90 % of annual exports.
- It holds the **third largest reserves of liquefied natural gas** in the world.
- **Strategic Role:** Qatar is a member of the **Gulf Cooperation Council (GCC)**.
- It hosts a **major United States military base at Al Udeid**.

KOSI RIVER



- It is a **transboundary river** which flows through **China, Nepal, and India**.
- It is a prominent **tributary of the Ganges**.
- People often call it the "**Sorrow of Bihar**" because of the big floods it can cause, especially in the Indian state of Bihar.

Course:

- The river Kosi is formed by the **confluence of three streams**, namely the **Sun Kosi, the Arun Kosi, and the Tamur Kosi**, all of which have their origin in the Himalayan region of Nepal and Tibet.
- About 48 km north of the Indian-Nepalese frontier, the Kosi is joined by several major tributaries and breaks southward through the Siwalik Hills at the narrow **Chatra Gorge**.
- The river then **emerges on the great plain of northern India in Bihar state** on its way to the Ganges River, which it enters south of Purnea after a course of about 724 km.
- The Kosi drains an area of 74,500 sq.km, of which only 11,070 sq.km lie within Indian Territory.
- Over the last 250 years, **the Kosi has shifted its course over 100 kilometres from East to West** and the unstable nature of the river is attributed to the **heavy silt** it carries during the monsoon season.

- **Corn (maize)** is extensively cultivated on the sandy soils of the Kosi's basin.
- **Tributaries:** It has seven major tributaries: Sun Koshi, Tama Koshi or Tamba Koshi, Dudh Koshi, Indravati, Likhu, Arun, and Tamore or Tamar.

TEHRI LAKE



- **Artificial dam reservoir** located in the Tehri Garhwal town of Uttarakhand.
- It came into existence during the construction of **Tehri Dam when the water from the Bhagirathi River** was diverted to fill the dam reservoir.
- It lies at an elevation of 1,700 meters.
- The depth of Tehri Lake is around 262 meters, and the length is 42 kms.
- Filled with multi-purpose rock and earth, Tehri Dam Lake was created with the motive of supplying water for generating electricity, drinking, and irrigation.
- It is surrounded by the majestic Himalayan mountains, making it a picturesque destination.

KHARG ISLAND



- It is a small coral island in Iran in the **northern Persian Gulf**.
- It lies about 30 Km from the Iranian mainland.
- Its area is 25 sq.km., its length is 8 km, and its width is 4.5 km.
- This **rocky limestone island** is unique because it is **one of the few islands in the Persian Gulf with freshwater**, which has collected within the porous limestone.
- The island experiences hot and humid summers, and its highest point, **Mount Didehban**, stands at 87 meters above sea level.
- The discovery of an **offshore oil field** in the waters around Kharg in the early 1960s stimulated the development of the island as a site for major petroleum and petrochemical installations.
- Connection by pipelines to the underwater oil fields, as well as to the oil fields in Khuzistan province, transformed Kharg into **Iran's largest oil-loading terminal** by the early 1970s.
- During the Iran–Iraq war (1980–1988), Kharg repeatedly was bombed, and its oil facilities

suffered extensive damage, but they were reconstructed in the early 1990s.

- It facilitates as much as **90 percent of the country's oil exports** and is vital for Iran's economy.
- It boasts a massive storage capacity of 28 million barrels and loading infrastructure capable of handling VLCCs and ULCCs.
- It has a loading capacity of about 7 million barrels per day.
- It can load eight to nine supertankers simultaneously.
- Its strategic significance lies in its **proximity to the Strait of Hormuz**, a crucial global oil passage.

LITANI RIVER



- It is **Lebanon's longest waterway** that lies entirely within Lebanese territory.
- Originating in the central **Beqaa Valley** west of Baalbek and flowing south before turning sharply west to **drain into the Mediterranean Sea**.
- It serves as a vital infrastructure hub, housing the **Qaraoun Dam** and the **Markaba power station**, which are essential for the nation's hydroelectricity and irrigation.
- Israel's defence minister recently stated that the military would take control of south Lebanon all the way to the Litani river.

Blue Line

- ✓ It is a **United Nations-identified withdrawal line, not an international**

border, which is used to verify **Israel's withdrawal from Lebanon** as mandated by UN Security Council resolutions.

- ✓ It is located in southern Lebanon. It extends for about 120 kilometres from the Mediterranean coast to the **tri-border area (Lebanon, Israel, Syria) near the Golan Heights**.
- ✓ It was established in 2000 by the UN to confirm Israel's compliance with **UN Security Council Resolutions 425 (1978) and 1701 (2006)** after Israeli withdrawal from Lebanon.
- ✓ It serves as a line of withdrawal, not a legally recognised international border. It is patrolled by the **UN Interim Force in Lebanon (UNIFIL)** to prevent escalation.
- ✓ Resolution 1701 calls for a zone free of armed groups between the Blue Line and the Litani River (except Lebanese armed forces and UNIFIL).

PREAH VIHEAR TEMPLE



- It is a Hindu temple located in the Preah Vihear Province, in the northern part of **Cambodia**.
- It is located atop a cliff on the Cambodia–Thailand border in the Dangrek Mountain range.
- It is dedicated to Lord Shiva.

- It was built primarily during the golden period of the **Khmer Empire**, in the eleventh and twelfth centuries.
- It was built firstly by **King Suryavarman I (1002-50)** and then expanded upon by **Suryavarman II (1113-50)**.
- It is a **UNESCO World Heritage Site**.

Architecture

- It is an outstanding masterpiece of **Khmer architecture**.
- The temple is composed of a series of sanctuaries linked by a system of pavements and staircases over an 800-metre-long axis.
- It features more than five successive gopuras.
- Unlike other structures of this kind, the gopuras here are connected by a long path and topped with multi-tiered platforms.
- Each gopura has a small staircase. Some of these gopuras have stone roofs, while others have wooden roofs, many of which are in ruins

Dispute

- Preah Vihear Temple is the subject of a long-running **territorial dispute between Thailand and Cambodia**.
- In 1962, the International Court of Justice ruled that it belonged to Cambodia.
- However, Thailand has maintained that the land surrounding the temple — especially a 4.6 sq.km. patch — remains unresolved.
- Tensions escalated again in 2008 after Cambodia succeeded in registering Preah Vihear as a UNESCO World Heritage Site.
- Thai nationalists objected, and skirmishes broke out, culminating in a deadly exchange in 2011 that killed at least 15 people.
- The ICJ reaffirmed its ruling in 2013, this time declaring that the surrounding land was also Cambodian — a decision that still stings in Bangkok.

BEAS RIVER



- It is a river passing through the northern Indian states of **Himachal Pradesh and Punjab**.
- It is one of the five rivers that give **Punjab ("Five Rivers")** its name.
- It was known as **Vipas** in the past, meaning the "Unfettered" river.
- The Beas River was the **approximate eastern limit of Alexander the Great's invasion of India in 326 BCE**.

Course:

- The river **originates in the Rohtang Pass** of the Himalayas in central Himachal Pradesh at a height of 13,050 feet.
- From there it flows south through the **Kullu Valley**, receiving tributaries from the flanking mountains, and then turns west to flow past Mandi into the **Kangra Valley**.
- After crossing the valley, the Beas enters Punjab state and veers south and then southwest to its **confluence with the Sutlej River at Harike**.
- The total length of the river is 470 km.
- The Beas catchment is under the influence of **western disturbances** that bring snowfall to the upper sub-catchment during winter, and the monsoon provides around 70% of the annual rainfall during June – September.
- **Major Tributaries:** Bain, Banganga, Luni, and Uhal, along with Banner, Chakki, Gaj, Harla,

Mamuni, Parvati, Patlikuhlal, Sainj, Suketi, and Tirthan.

- **Dams:** The Pong Dam, also known as the Beas Dam, is an earth-fill embankment dam constructed on the river Beas in the Kangra district of Himachal Pradesh.

TONGA



- It is a **sovereign country in Polynesia**, composed of an **archipelago of 169 islands** located in the **South Pacific Ocean**.
- Neighbouring countries include Fiji to the west, Cook Islands to the east and Samoa north.
- These islands are divided into three main groups: **Tongatapu in the south, Ha'apai in the center, and Vava'u in the north**.
- The **western islands** (making up the Tongan Volcanic Arch) are all of **volcanic origin**; the **eastern islands are nonvolcanic** and are composed of **coral limestone and sand**.
- The capital city of Tonga is Nuku'alofa, situated on the northern shore of Tongatapu Island.
- **Geographical Features of Tonga**
 - It features **flat terrain** with limestone and coral formations.
 - Mostly flat islands with limestone bedrock formed from uplifted coral formation; others have limestone overlying volcanic rock.

- The highest point in this region is Kao Island in the Ha'apai group.
- Tonga is a member of the Commonwealth Clean Ocean Alliance and Marine Protected Areas Action Groups.

LADAKH MAGMATIC ARC



- It is a belt of igneous rocks in the **Trans-Himalaya formed in the period Jurassic to Eocene-** 201.3 million years ago to 33.9 Million Year (Ma).
- The LMA is a long-extinct volcanic system evolved through three major phases of geological activity over tens of millions of years.

Process of Formation

- Millions of years before **the region that is now called Ladakh lay above an ocean called the Neo-Tethys Ocean.**
- Below that ancient sea, giant slabs of Earth's crust slowly plunged into the mantle in a process **known as subduction leading to the formation of the Ladakh Magmatic Arc (LMA).**

Phases of Formation

- **Island Arc Formation:** In its earliest stage, Ladakh resembled a chain of volcanic islands rising from the Neo-Tethys Ocean.
- Represented by the Dras–Nidar Island Arc Complex (DNIAC)

- Magma primarily originated from the mantle
- Minimal contribution from subducted sediments
- **Crustal Enrichment and Batholith Formation:** As tectonic plates converged, the system evolved:
 - Formation of large granite bodies known as the **Ladakh Batholith (LB)**
 - Increased input from continental crust and recycled sediments
 - Chemical signatures indicate deep crustal processes and magma mixing
 - This phase coincides with the approaching collision between India and Eurasia.
- **Post-Collision Magmatism:** After the plates collided and the Neo-Tethys Ocean closed, tectonic activity continued:
 - Formation of **mafic dykes—vertical sheets of volcanic rock**
 - Magma derived from a previously enriched mantle source
 - Indicates lingering tectonic and magmatic activity even after collision.

CAMEROON



- Country lying at the junction of **western and central Africa.**
- The capital is **Yaoundé**, located in the south-central part of the country.
- It is bordered by **Nigeria to the northwest, Chad to the northeast, the Central African Republic to the east, the Republic of the Congo to the southeast, Gabon and**

Equatorial Guinea to the south, and the Atlantic Ocean to the southwest.

- Cameroon's diverse geography comprises northern savanna, central highlands, southern coastal plains, and western volcanic mountains, including Mount Cameroon.
- Four major drainage systems involve rivers like Sanaga, Wouri, and Nyong draining into the Atlantic, while the Benue River flows to Nigeria's Niger basin.
- Soils vary, with nutrient-rich ones in the south and more fertile but susceptible ones in the north.

Climate and Flora and Fauna

- The tropical climate features hot temperatures year-round, with precipitation influenced by contrasting air masses.
- Cameroon's hot and humid southern region boasts dense rainforests with towering hardwood evergreen trees, including mahogany and ebony, reaching over 200 feet. Orchids and ferns thrive in this biodiversity-rich
- The rainforest transitions to a semi-deciduous forest in the central region, where trees shed leaves during the dry season. Heading north, the landscape shifts to wooded savanna with scattered trees, 10 to 60 feet tall. Tree density decreases towards the Chad basin, where vegetation is sparse, primarily Acacia species.
- Cameroon's tropical rainforest, situated between 4,000 and 8,000 feet (1,200 and 2,400 meters) elevation, differs from lowland rainforests.
- Coastal regions experience a rainy season from April to November, while the north has a dry season from October to May. Mount Cameroon receives exceptionally high annual precipitation. Coastal areas feature mangroves.

- Cameroon's dense forests are home to diverse wildlife, including red and green monkeys, chimpanzees, mandrills, rodents, bats, and a variety of birds, from small sunbirds to large hawks and eagles. Elephants are found in the forests and grassy woodlands, alongside baboons and various antelope species.
- **Waza National Park** in the north, initially established for elephant, giraffe, and antelope protection, houses a range of forest and savanna animals like monkeys, baboons, lions, leopards, and various birds.
- Southward lies **Dja Faunal Reserve**, a well-preserved rainforest recognized for biodiversity and designated a UNESCO World Heritage site in the late 1980s.
- **Population:** Over 28 million people with high ethnic diversity and a mix of Christianity (majority), Islam, and traditional faiths.
- **Economic Overview:** Cameroon has a market-based, diversified economy, including agriculture, mining, services, oil, and gas. It is classified as a lower-middle-income country.
 - Oil is the largest export (roughly 40% of exports), followed by timber, aluminium, cocoa, coffee, and cotton.

DWARKA BASIN



- Dwarka Basin refers to a series of **underwater archaeological remains located off the coast of modern-day**

Dwarka and Bet Dwarka in Gujarat (western tip of Saurashtra Peninsula).

- Geologists suggest the city may have been **submerged due to post-glacial sea-level rise, tectonic activity, or coastal erosion** over millennia.
- In Hindu mythology, it is the **kingdom of Lord Krishna**, which, according to the Mahabharata and Puranas, was swallowed by the Arabian Sea following his departure from the world. This is viewed as the **transition to the Kali Yuga**.
- Some archaeologists dated the remains to **approximately 1500–2000 BCE** (the protohistoric period), aligning it with the end of the Harappan civilization.
- Since the 1980s, the Archaeological Survey of India (ASI) has documented **massive sandstone blocks, semicircular structures, and wall-like formations**. Over 120 stone anchors of various types (triangular, grapnel, and ring-stone) have been discovered, confirming that the area was a **major ancient port and jetty**.
- The current Dwarka town houses the **Dwarkadhish Temple (Jagat Mandir)**, a major Krishna shrine rebuilt in the 15-16th century after destruction by Mahmud Begada in 1472.
- The Gujarat government plans to introduce **submarine tourism** to allow public access to these underwater structures.
- It is one of the four **Char Dham pilgrimage** sites, alongside **Badrinath** in the north, **Puri** in the east, and **Rameswaram** in the south.

MUSI RIVER



- The Musi River, also known as the Muchukunda or Musunuru River, is a **major tributary of the Krishna River** in the Deccan Plateau, flowing through **Telangana**.
- The river gained prominence in the late 16th century when Muhammad Quli Qutb Shah, the founder of **Hyderabad**, **established the city along its banks**.
- It originates from Anantagiri Hills in Telangana. After originating, it flows in an eastward direction, cutting through the heart of **Hyderabad city, where it historically divided the Old City from the New City**.
- It ultimately joins the Krishna River near Wazirabad in Telangana, after flowing for a total length of 240 kilometers.
- **Himayat Sagar** and **Osman Sagar** are the two dams that are constructed over the river.
- **Hussain Sagar Lake** was built on a tributary of the River Musi. It was built to meet the water and irrigation needs of Hyderabad.
- Several historic bridges and mosques line its banks, reflecting **Qutb Shahi and Nizam-era architecture**.

- Now due to random urbanization and lack of planning the river has become a holder of all **the unprocessed domestic and industrial waste drained out of Hyderabad.**

KURDISTAN REGION



- The Kurdistan Region refers to **areas inhabited by ethnic Kurds.**
- The Kurds, a distinct ethnic and linguistic group, have long sought independence and greater autonomy. An estimated 25-30 million Kurds live in **Turkey, Syria, Iraq and Iran.**
- The Kurds are mostly **Sunni Muslim without any official homeland** and continue to seek recognition, political rights, autonomy or independence
- **Kurdish independence movement** is a nationalist aspiration for self-determination among the Kurdish people. This has led to tensions with govts in the region. It **faces opposition from Iraq, Turkey, Iran & Syria**, fearing territorial loss.
- Iraq rejected the **2017 Kurdistan independence referendum**, leading to military and economic retaliation.

- **Turkey continues to do military operations** against Kurdish groups, considering them a security threat.
- It has been alleged that Turkey indirectly helped ISIS against Kurds. **Kurdish forces (Peshmerga) have played a key role in fighting ISIS** and maintaining security in Iraq.

BAB-EL-MANDEB STRAIT



- Amid the escalating Crisis in West Asia, Iran has **threatened to weaponize the strategic Bab el-Mandeb Strait** alongside the Strait of Hormuz.
- The **Iran-aligned Houthis in Yemen** are geographically and militarily positioned to execute disruptions in the Red Sea and Bab el-Mandeb.
- Bab-el-Mandeb Strait is a narrow maritime chokepoint situated **between the Arabian Peninsula and the Horn of Africa.**
- It connects the **Red Sea (to the northwest)** to the **Gulf of Aden and the Arabian Sea/Indian Ocean (to the southeast).**
- It separates **Yemen (on the Asian side)** from **Djibouti and Eritrea (on the African side).**
- The strait is 20 miles (32 km) wide and is divided into two channels by **Perim Island**, which belongs to Yemen.
- The Red Sea to the Suez Canal via the Bab-el-Mandeb is one of the world's most critical maritime trade routes. It is a key chokepoint for the movement of crude oil,

petroleum products, and liquefied natural gas (LNG) from the Persian Gulf to global markets.

- Approximately **10-12% of global trade** and nearly **30% of global container traffic** passes through here.

ZOJILA PASS



- A tragic avalanche at the high-altitude Zojila Pass, resulted in the death of five individuals and left several others injured or trapped.
- Zojila is a strategic high mountain pass in the Western Himalayas. It serves as the only terrestrial link **between the Kashmir Valley and the high-altitude cold desert of Ladakh**.
- It is situated at an elevation of approximately **3,580 metres** (though some sections reach up to 5,008 metres), making it the second-highest pass on the Srinagar–Leh Highway after Fotu La.
- It is located on the boundary between the Ganderbal district of Jammu and Kashmir and the Kargil district of Ladakh.
- The pass was a **major battleground during the First Kashmir War**. It was initially seized by Gilgit rebels/Pakistan forces in 1948.

- **Operation Bison:** In a historic military feat on November 1, 1948, Indian forces recaptured the pass using tanks. This remains the highest altitude at which tanks have ever operated in combat in world history.

- To overcome the pass's vulnerability to heavy snowfall and avalanches, the **Zoji-la Tunnel (14 km long) is currently under construction**. Once finished, it will be the longest bidirectional tunnel in Asia.

SUKHNA LAKE



- It is an **artificial lake** located in the city of **Chandigarh** at the foothills of the Shivalik hills.
- This 3 sq.km. **rain fed lake** was created in 1958 by damming the **Sukhna Choe**, a seasonal stream coming down from the Shivalik Hills.
- The lake is 1.52 km long and 1.49 km wide.
- The lake is fringed by a golf course to the south, and Nek Chand famous Rock Garden of Chandigarh to its west.
- The lake is declared **National Wetland** by the Government of India.
- During winter, Sukhna Lake transforms into a haven for diverse migratory birds such as Siberian ducks, storks, and cranes,

hosting around 30 resident and migratory species.

- The lake is also a part of the **Sukhna Wildlife Sanctuary**.
- Sukhna Lake has the longest channel for rowing and yachting events in Asia.
- The Punjab and Haryana high court has declared Sukhna Lake a **“living entity”** or

“legal person” with rights, duties and liabilities of a living person. It also declared all citizens of Chandigarh as **loco parentis** (in the place of a parent) to save the lake from extinction.

Government Schemes

DHARTI AABA JANJATIYA GRAM UTKARSH ABHIYAN

Context: The Ministry of Tribal Affairs organized a workshop to improve implementation of the DAJGUA Scheme.



About Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA) Scheme:

- It was **originally called the Pradhan Mantri Janjatiya Unnat Gram Abhiyan (PM-JUGA)** & was approved by the Cabinet in September 2024.
- It is **based on the learnings and success of PM-JANMAN** (PM Janjati Adivasi Nyaya Maha Abhiyan).
- Aim: Improving socio-economic condition of tribal communities, by adopting **saturation coverage for tribal families in tribal-majority villages and aspirational districts.**
- India has **Scheduled Tribe population of 10.45 crore** as per 2011 census and there are >700 tribal communities.
- Total outlay for the scheme: Rs.79,156 crore with Central Share of Rs.56,333 crore.
- Coverage: **63,000 villages benefitting more than 5 crore tribal people**, covering 549 districts across 30 States/UTs.
- It comprises **25 interventions to be implemented by 17 ministries** through funds allocated under Development Action

Plan for Scheduled Tribes (DAPST) in next 5 years.

- Tribal villages covered will be mapped and progress will be **monitored on PM Gati Shakti platform.**

Mission's Four Goals:

- Goal-I: Develop Infra such as Pucca houses and improving Village Infra.
- Goal-2: Promotion of Economic Empowerment through Skilling, Entrepreneurship promotion, and livelihoods (self-employment).
- Goal-3: Universalization of Access to Good Education.
- Goal-4: Healthy lives and Dignified Ageing.

Innovative Schemes under PM-JUGA:

- **Tribal Home Stay:** To tap tribal tourism, 1000 Home stays will be promoted under Swadesh Darshan.
- **Sustainable Livelihood Forest Right Holders (FRA):** Special focus on 22 lakh FRA patta holders residing in forest areas for recognizing and securing forest rights.
- Improving **infrastructure of Government residential Schools and Hostels** on lines of PM-Shri Schools.
- Advance facilities for diagnosis of **sickle cell disease.**
- **Multipurpose Marketing Centre** for marketing of tribal products

NATIONAL RARE DISEASES POLICY 2021

Context: International Rare Diseases Day was commemorated recently and the Ministry of Health and Family Welfare highlighted the role of the NDRP in this regard.



About National Rare Disease Policy (NRDP) of 2021:

- It was launched by **Union Ministry of Health and Family Welfare** with the following aims:
 - Increase focus on indigenous research and local production of medicines.
 - Lower the cost of treatment.
 - Screen and detect rare diseases at early stages.

Categorization under the NRDP:

- **Group 1:** One time curative treatment.
- **Group 2:** Long-term or lifelong treatment.
- **Group 3:** Definitive treatment is available but involves very high cost and lifelong therapy.

Financial Support Provided:

- Those suffering from **Group 1** diseases will get financial support up to **Rs. 20 lakhs under the umbrella scheme of Rashtriya Arogya Nidhi.**

- Financial support up to **Rs. 50 lakhs to patients suffering from Groups 2 and 3** diseases for treatment in any of the Centre of Excellence (CoE) mentioned in NPRD, outside the Rashtriya Arogya Nidhi.
- **Eligibility:** All those who are eligible as per norms of PM Jan Aarogya Yojana (about 40% of population).

Other Provisions:

- It covers **treatment in govt tertiary hospitals only.**
- **Alternate Funding:** This includes crowdfunding by setting up a digital platform for voluntary contributions.
- The policy aims to **designate eight health facilities as 'Centres of Excellence'** and these will be provided one-time support of **Rs. 5 crore for upgrading diagnostics facilities.**
- A **national hospital-based registry of rare diseases** will be created to ensure adequate data and comprehensive definitions of such diseases.

Rare Diseases

- ✓ There are 6,000-8,000 classified rare diseases, but less than 5% have therapies available to treat them.
- ✓ Eg: Pompe disease, spina bifida, cystic fibrosis, spinal muscular dystrophy, haemophilia etc.
- ✓ >90% have no approved treatment and less than 1 in 10 patients receive disease-specific treatment.
- ✓ 80% of them have genetic origins.
- ✓ They have differing definitions in various countries and are generally prevalent in 1 in 10,000 persons.



Rashtriya Arogya Nidhi provides for financial assistance to those living Below Poverty Line (BPL) and who are suffering from major life-threatening

diseases, to receive medical treatment at any of super specialty govt hospitals.

PM MATSYA SAMPADA YOJANA

Context: The Union Cabinet recently approved increased funding for the PM Matsya Sampada Yojana.

About PM Matsya Sampada Yojana:

- It was launched in Sept. 2020 by the Ministry of Fisheries, Animal Husbandry and Dairying for a period of five years from **2020-21 to 2024-25**. It has been extended to **2025-26**.
- **National Fisheries Development Board (NFDB)** is nodal agency for implementing training, awareness and capacity-building under PMMSY.
- PMMSY will be implemented as an umbrella scheme having both **Centrally Sector Scheme & Centrally Sponsored Scheme Components**.



Pradhan Mantri Matsya Sampada Yojana

Aims and Objectives

- Harnessing of fisheries potential
- Enhancing of fish production and productivity
- Modernizing and strengthening of value chain – post-harvest management and quality improvement
- Doubling fishers and fish farmers incomes and generation of employment
- Enhancing contribution to Agriculture GVA and exports
- Social, physical and economic security for fishers and fish farmers
- Robust fisheries management and regulatory framework
- It aims to **enhance aquaculture productivity** from existing 3 to 5 tons per hectare and **double exports** to Rs. 1 lakh crore annually.

- There are subcomponents/activities under the following 3 broad heads:
 - Enhancement of Production and Productivity
 - **Infrastructure** and Post-harvest Management
 - Fisheries Management and **Regulatory Framework**
- It focuses on adopting '**Cluster or Area based approaches**' and creation of fisheries clusters to leverage economies of scale. It gives specific focus on **high-margin employment** generation activities such as **seaweed and ornamental fish** cultivation.
- Under the scheme, **extension of Kisan Credit Card (KCC) facilities** to fishers and fish farmers has been approved to help them meet working capital needs.

Key Achievements of PMMSY:

- India has emerged as the **2nd-largest fish producer** globally, contributing nearly **8%** of global fish production.
- It has created **58 lakh livelihoods and empowered 99,018 women**.

Strategic Initiatives under PMMSY:

- **Empowering women in fisheries:** Provides up to 60% financial assistance for women-oriented projects in the fisheries sector.
- **Technology Adoption:** Scaled up Biofloc and Recirculatory Aquaculture System (RAS) units to boost productivity sustainably.
- **Formalization & Digitalization:** The PM Matsya Kisan Samridhi Sah Yojana (a sub-scheme of PMMSY) & National Fisheries Digital Platform (NFDP) formalize the sector and offer single-window access to benefits.
- **Climate Resilient Coastal Fishermen Villages (CRCFV):** The development of 100

CRCFV aims to enhance climate resilience in coastal communities.

- **Rangeen Machhli App:** ICAR-Central Institute of Freshwater Aquaculture launched it under PMMSY to empower farmers, hobbyists, and professionals in the ornamental fish sector.
- **Matsya Seva Kendra (MSK):** MSKs are one-stop centres established under PMMSY to support fishers and fish farmers. They provide a wide range of technical, advisory, and capacity-building services aimed at modernizing the fisheries sector.
- **Sagar Mitra:** It is a field-level interface between govt and coastal fish farmer. It aims to support fishers with data dissemination, market insights, and sustainable fishing practices.

PM-KISAN SCHEME

Context: The Union Govt. is set to release the next set of payments under the PM KISAN Scheme.



About Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) Scheme:

- The scheme aims to **supplement the financial needs of the farmers in procuring various inputs** to ensure proper crop health and appropriate yields,

commensurate with the anticipated farm income.

- Union Govt. transfers **Rs 6,000 per year, in three equal instalments**, directly into bank accounts of all landholding farmers **irrespective of the size of their land holdings**.
- It is a **Central Sector Scheme** with 100% funding from Govt of India.
- The responsibility of **identification of beneficiaries rests with States/UTs**.

Achievements So Far:

- **Over 11 crore farmers** across the country have availed the scheme.
- More than **3 crore women farmers** have been included in the scheme.

Recent Initiatives under the Scheme:

- **PM-KISAN Mobile App:**
 - Has been developed by National Informatics Centre along with the Ministry of Electronics and Information Technology.
 - Farmers can view the status of their application, update or correct their Aadhaar cards and also check the history of credits to their bank accounts.
- **Facial Recognition:**
 - The Union Govt, has rolled out Face Authentication in PM-Kisan app to enhance efficiency and accessibility of the scheme.
 - It is based on the biometric data available on UIDAI databases.
- **Integration with Bhashini**
 - The scheme was integrated with the AI based Bhashini platform to provide farmers information in their mother tongue/native language.
- **Kisan Pehchan Patra (Farmer ID)**

- From Jan 2025 onwards, this farmer ID is mandatory for registering new beneficiaries.
- It is a unique Aadhaar-linked identity that is connected to the state land records.
- It will include key data such as demographic details, crops cultivated and land ownership.
- The data collected will form the Farmers' Registry. This will benefit farmers by improving access to crop insurance, loans, and other govt schemes.

Farmers excluded from PM KISAN:

- All institutional landholders.
- Former and present holders of constitutional posts.
- Former and present State/Central Ministers, MPs, MLAs; former and present Mayors, former and present Chairpersons of District Panchayats.
- All serving or retired officers and employees of Central/State Govt (Excluding Group D employees).
- All retired pensioners whose monthly pension is Rs.10,000/-or more.
- All Persons who paid Income Tax in the last assessment year.
- Professionals like Doctors, Engineers, Lawyers, Chartered Accountants, etc.

With the number of PM-Kisan beneficiaries dropping by over 20% to 8.12 crore from a peak of 10.47 crore in April-July 2022, the govt added back 34 lakh farmers via the "saturation drive" under the Viksit Bharat Sankalp Yatra in 2024 and 2025.

PM UJJWALA YOJANA

Context: The recent LPG shortage and price rise in India has brought attention to the PM Ujjwala Yojana.



About PM Ujjwala Yojana (PMUY):

- The Pradhan Mantri Ujjwala Yojana is a flagship scheme **with the objective of making clean cooking fuel such as LPG available to the rural and deprived households.**

- The International Energy Agency says about **681 million people** in India rely on **solid fuels** for cooking, posing serious health and environmental concerns.

- Introduced by: **Ministry of Petroleum and Natural Gas**

Objectives:

- **Empowering women** and protecting their health.
- **Reducing the number of deaths** in India due to unclean cooking fuel.
- Preventing young children from a significant number of **acute respiratory illnesses** caused due to **indoor air pollution** by burning fossil fuel.

Features:

- The scheme provides a **financial support** of Rs 1600 for each LPG connection to the BPL households.
- Along with a **deposit-free LPG connection**, Ujjwala 2.0 will provide the first refill and a hotplate free of cost to the beneficiaries.

Benefits of PMUY:

- The eligible beneficiaries receive a **free LPG connection.**
- The beneficiaries also receive a **subsidy on the first six refills** of 14.2 kg cylinders or eight refills of 5 kg cylinders.

- The beneficiaries can opt for an EMI facility to pay for the cost of the stove and the first refill.
- The beneficiaries can also join the **PAHAL scheme** to receive the subsidy amount directly in their bank accounts.
 - PAHAL (Pratyaksh Hanstantrit Labh) Scheme is also known as the Direct Benefit Transfer for LPG (DBTL) scheme.

Phases of PMUY:

Phase I:

- It was launched on May 1, 2016.
- The target under the scheme was to release **8 Crore LPG Connections** to the deprived households by March 2020.
- The release of 8 Crore LPG connections under the scheme has also helped in **increasing LPG coverage from 62% in May 2016 to 99.8%** as on 1st April 2021.

Phase II:

- In FY 21-22, **additional 1 crore LPG connections** to the eligible households by March 31, 2022 was provisioned.
- The target of releasing additional 1 crore LPG connections under Ujjwala 2.0 was achieved in January 2022.

Phase III:

- In 2023, the Union cabinet approved the extension of the PM Ujjwala Yojana (PMUY) for the **next three financial years** from 2023-24 to 2025-26.

AYUSHMAN BHARAT - PM JAN AAROGYA YOJANA

Context: A study by NITI Aayog has revealed that patients availing treatment in private hospitals under the AB-PMJAY incur significant out-of-pocket expenditure (OOPE).



About Ayushman Bharat - PM Jan Aarogya Yojana (AB-PMJAY):

- It is the **world's largest health insurance scheme** fully financed by the govt.
- Launched in 2018, it offers a sum insured of **Rs.5 lakh per family** for secondary care and tertiary care. It covers surgery, medical and day care treatments, cost of medicines and diagnostics.
- Covers medical & surgical procedures for almost all health conditions through a **comprehensive list of 1,949 packages**. It features **packaged rates** (each product/service during treatment cannot be charged separately).
- Beneficiary card for AB-PMJAY can be used to **avail benefits for any existing state health insurance schemes**.
- In the 2024 Interim Budget, the union govt. decided to extend health **coverage under the scheme to Accredited Social Health Activists (ASHAs) and Anganwadi workers**.
- **No restrictions on family size, age or gender** for inclusion and **all pre-existing conditions are covered**.
- It covers up to **3 days of pre-hospitalization and 15 days post-hospitalization** and **benefits of the scheme are portable across India**.
- Scheme has a **dedicated workforce of PM Arogya Mitras (PMAMs)** who guide and assist beneficiaries.

- PMAMs also make **calls to every beneficiary who availed treatment within 48 hrs of discharge** to verify quality of treatment.
- Scheme has a **National Anti-Fraud Unit (NAFU)** to design, implement, and oversee anti-fraud initiatives. There are also **Anti-Fraud Units at the state level.**

Identification of Beneficiaries:

- It targets the beneficiaries as identified by latest **Socio-Economic Caste Census (SECC)** data.
- National Health Authority (NHA) has **provided flexibility to States & UTs to use non-SECC beneficiary databases** with similar socio-economic profiles for tagging leftover families.
- In the 2025 Budget, the Finance Minister announced that the PMJAY will now **cover all gig economy workers.**
- In the 2024 Budget, the Finance Minister launched the **Ayushman Vaya Vandana Card** under AB-PMJAY to ensure free healthcare access to **all senior citizens aged 70 and above**, regardless of their income or social status.

Funding:

- Funding is **shared – 60:40 for all states and UTs with a legislature**, 90:10 in Northeast and Himalayan states, and 100% Central funding for other UTs.

Nodal Agency:

- **National Health Authority (NHA)** has been constituted as an autonomous entity **under the Society Registration Act, 1860** for implementation of PM-JAY.
- The **State Health Agency (SHA)** is responsible for the implementation of AB-PMJAY in individual states.

Achievements of AB-PMJAY:

- It has covered over **15.5 crore families (55 crore beneficiaries).**
- **11 states/UTs have pushed for 100% coverage** of their population.
- Approx. **28.45 Crore Ayushman Cards created since 2018**, out of which **9.38 crore were created in 2024.**
- **26,901 hospitals including 11,813 private hospitals** have been empanelled under AB PM-JAY.
- Catered to more than **6.11 crore hospital admission worth Rs 78,188 crore** in since 2019.
 - 1.7 crore hospitals admissions worth over ₹25,000 crores were authorised during 2024.
- It has **reduced out of pocket expenditure (OOPE) of beneficiaries by 60 %** and **increased access to tertiary care by 65 %.**



Women account for approx. 49% of total Ayushman cards created and approx. 48% of total authorized hospital admissions. Recently, the Union Govt. extended the coverage of AB-PMJAY to all senior citizens aged above 70.

ADITI SCHEME

Context: The Ministry of Defence launched ADITI 4.0 during the recent National Defence Industries Conclave 2026.



About Acing Development of Innovative Technologies with iDEX (ADITI) Scheme:

- It was launched in March 2024 and is aimed at **fostering indigenous innovations in critical and strategic defence technologies**.
- The scheme targets **development of approximately 30 deep-tech critical and strategic technologies** within the proposed timeframe.
- **Start-ups can avail grant-in-aid of up to 50% of project development budget (maximum Rs 25 crore)** for their research, development, and innovation efforts in defence tech.
- ADITI is backed by a budget of **Rs 1150 crore spanning from 2023-24 to 2025-26**.
- It **operates within iDEX** (Innovations for Defence Excellence) framework under the Ministry of Defence.

Features of the Scheme:

- **Bridge-building Initiative:** ADITI aims to establish a 'Technology Watch Tool' to bridge the gap between the modern Armed Forces' expectations and requirements and the capabilities of the defence innovation ecosystem.
- **Incentives for Innovators:** iDEX has been expanded to iDEX Prime, offering increased assistance from Rs 1.5 crore to Rs 10 crore, motivating young innovators to participate.
- **Empower Youth:** Aims to nurture youth innovation, propelling India forward in defence technology.

Innovations for Defence Excellence (iDEX) Initiative

- ✓ iDEX is an initiative to contribute towards **modernization of the defence industry**. It was launched in April 2018.
- ✓ iDEX aims to **promote innovation and technology development in defence and aerospace by engaging industries** (including MSMEs, R&D institutes start-

ups, academia, and individual innovators).

- ✓ iDEX will provide the industry with funding and other support to carry out Research & Development.
- ✓ It will be **funded and managed by Defence Innovation Organization (DIO)**, and will function as the executive arm of DIO.

NATIONAL LIST OF ESSENTIAL MEDICINES (NLEM)

Context: There have recently been criticisms from pharma companies that the price of NLEM drugs must be increased due to recent rises in global inflationary pressure.



About NLEM:

- NLEM is a list **released by Ministry of Health & Family Welfare (MoHFW)**.
- Medicines listed in the NLEM are sold below a **price ceiling fixed by the National Pharmaceutical Pricing Authority (NPPA)**.
 - NPPA was constituted in 1997 as an **attached office under Ministry of Chemicals & Fertilizers** as an independent regulator for drug pricing.
- As per the **Drugs (Prices) Control Order 2013**, drugs in the NLEM, which are about 15% of the pharma market, are **allowed an increase by as per the WPI (Wholesale**

Price Index) while the rest 85% are allowed an **automatic increase of 10% annually**.

- Annual change in prices of scheduled drugs under the NLEM is controlled and **rarely crosses 5%**.
- NLEM was framed on the lines of **Essential Medicines List (EML)** released by the **WHO**.
- MoHFW released the **first NLEM in 1996**. It was subsequently **revised in 2003, 2011, 2015 and 2022**.

Criteria for a medicine to be included in the NLEM:

- **Essentiality:** A medicine may be essential considering the health status of the population and diseases which are prevalent.
- **Changing disease burden:** With time, the disease burden keeps changing in the country. So, the prevalent disease is considered while preparing the list.
- **Efficacy and Safety:** Medicine must have "unequivocal" evidence of efficacy and wide acceptance.
- **Cost-Effectiveness:** Total price of the treatment must be considered for inclusion in NLEM. Price of medicines solely cannot be the benchmark.
- **Fixed Dose Combinations (FDCs):** Only included if they have a proven advantage over single dose medicines.
- **Turnover:** High sales turnover is one of the benchmarks for inclusion.



An FDC drug includes two or more active pharmaceutical ingredients combined in a single dosage form, which is manufactured and distributed in fixed doses.

TB MUKT BHARAT ABHIYAN

Context: World Tuberculosis Day is commemorated annually on the 24th of March.



About TB Mukta Bharat Scheme:

- It is an initiative of **Ministry of Health and Family Welfare (MoHFW)** to accelerate the **country's progress towards the aim of tuberculosis (TB) elimination by 2025**.

Objectives:

- Provide additional patient support to improve treatment outcomes.
- Augment community involvement to meet commitment to end TB by 2025.
- Leverage activities through use of Corporate Social Responsibility (CSR).

Components:


- **Ni-kshay Mitra Initiative:** To ensure additional diagnostic, nutritional, and vocational support to TB patients. Ni-kshay Mitras are those who can support by adopting health facilities, blocks/wards/districts/states to complement govt. efforts.
- **Ni-kshay Digital Portal:** It will provide a platform for community support for persons with TB.

Other Indian Initiatives regarding TB:

- ✓ **India's National TB Elimination Programme** aims to meet the goal of ending the TB epidemic by 2025 from the country, five years ahead of the SDG for 2030.
- ✓ **National Strategic Plan (NSP) for TB Elimination (2017-2025)**
- ✓ **The Nikshay Ecosystem** (National TB information system)
- ✓ **TB Harega Desh Jeetega Campaign** to generate public awareness.
- ✓ Currently, two vaccines **VPM (Vaccine Project Management) 1002** and **MIP (Mycobacterium Indicus Pranii)** have been developed and identified for TB, and are under Phase-3 clinical trial.
- ✓ **Ni-kshay Poshan Yojana:** Rs 500 support through DBT to the patients.
- ✓ **Ayushman Bharat Digital Health Mission:** Creating digital health IDs for TB patients to ensure that proper diagnostics & treatment are available.

About TB:

- ✓ It is an infectious disease **caused by Mycobacterium tuberculosis** and it spreads among persons via the air.
- ✓ It commonly affects the lungs, but can also affect other parts of the body.
- ✓ It is a treatable and curable disease.
- ✓ **Bacille Calmette-Guérin (BCG)** is a vaccine for TB disease. It is provided under India's Universal Immunization Programme.

 In 2024, India reported over 25 lakh TB cases, accounting for over 27% of world TB cases. Extrapulmonary TB occurs when TB affects organs other than the lungs, such as the lymph nodes, abdomen, bones, and joints, or the nervous system. It accounts for about 15-20% of all TB cases globally.

UDAN SCHEME

Context: The Union Govt. has revamped the UDAN Scheme with a new set of subsidies for certain specified air routes.



About UDAN (Ude Desh ka Aam Naagrik) Scheme:

- The scheme was launched by the **Ministry of Civil Aviation** for regional airport development and regional connectivity enhancement.
- It is a **part of the National Civil Aviation Policy 2016** and is applicable for a period of 10 years.
- Aim: Expand access to **air travel for Tier 2 & Tier 3 cities** and shift traffic pattern away from Metro routes.

Key Features:

- Under the scheme, airlines have to **cap airfares for 50% of the total seats at Rs. 2,500 per hour** of flight.
- This would be achieved through:
 - Financial stimulus/concessions from Central & State govts.
 - **Viability Gap Funding (VGF)** - A govt grant provided to bridge gap between cost of operations and expected revenue.
 - **Regional Connectivity Fund (RCF)** was created to meet VGF requirements of the scheme.

Phases of the Scheme:

- **Phase 1** was launched in 2017 to connect underserved and unserved airports in the country.
- **Phase 2** was launched in 2018 to expand air connectivity to more remote and inaccessible parts.

- **Phase 3** was launched in Nov 2018 to enhance air connectivity to hilly and remote regions of the country.
- **Phase 4** was launched in Dec 2019, with a focus on connecting islands and other remote areas of the country.
- **Phase 5** launched in April 2023 with a focus on Category-2 (20-80 seats) and Category-3 (>80 seats) aircrafts with no restriction on distance between origin and destination.

Achievements of the Scheme:

- **68 underserved and unserved destinations** which include 58 Airports, 8 Heliports & 2 Water Aerodromes have been connected.
- **425 new routes** initiated, with air connectivity to 29 States/UTs.
- **More than 1 crore passengers** have availed the benefits of this scheme.

Status of India's Aviation Sector

- ✓ Among the fastest-growing aviation markets globally – it is a major growth engine to make India a USD 5 trillion economy by 2028.
- ✓ Over the past 6 years - **domestic passenger traffic has grown annually at 14.5%** and **international passenger traffic has grown at around 6.5%**.
- ✓ Domestic passenger traffic projected to rise to 16 crores in FY 23/24 and to 35 crores by 29/30.
- ✓ Fleet size, which rose from 400 to more than 700 in the last ten years, is set to move upwards of 2,000 by 2035.
- ✓ In 2023 alone, 1,622 commercial pilot licences were issued.
- ✓ **Number of airports has doubled from 74 in 2014 to 157 in 2024.**
- ✓ In 2020, the FDI policy for civil aviation was amended to allow **100% FDI in automatic route.**

ELIGIBLE MANUFACTURER IMPORTERS SCHEME



- It is designed as a trust-based facilitation measure, encouraging compliant manufacturers to benefit from simplified procedures.

- Under this initiative, **Eligible Manufacturer Importers (EMI)** will be able to clear imported goods without paying Customs duty at the time of clearance.
 - Instead, the applicable duty can be paid on a monthly basis as prescribed under the **Deferred Payment of Import Duty Rules, 2016**.
- **Duration:** EMI facility will be available from 1st April, 2026 and will remain in force till 31st March, 2028.
- **Eligible Manufacturer Importers are:** Existing Authorised Economic Operators (AEOs) AEO-T1 entities, including MSMEs that fulfill the eligibility conditions are also eligible to participate.
- Under this, approved Eligible Manufacturer Importers are expected to progressively obtain AEO-T2 or AEO-T3 status, enabling access to enhanced facilitation, faster clearances and priority treatment under the AEO Programme.
- It is expected to improve ease of doing business, strengthen compliance culture, and boost domestic manufacturing

CRIME AND CRIMINAL TRACKING NETWORK AND SYSTEMS (CCTNS)

Context: In the first month of 2026, Delhi Police secured the top position among all states and Union territories on the Crime and Criminal Tracking Network & Systems (CCTNS) Pragati dashboard.



About Crime and Criminal Tracking Network and Systems (CCTNS):

- The Crime and Criminal Tracking Network and Systems (CCTNS) is a **centralized online platform** conceptualized under the **Ministry of Home Affairs**.
- Launched in 2009 with a budget of ₹2,000 crore, it is part of India's **National e-Governance Plan**.
- It aims to establish a **comprehensive and integrated system to enhance the efficiency and transparency of police operations** at the police station level.
- Classified as a Mission Mode Project (MMP), the system provides law enforcement with tools for investigation, data analytics, policymaking, and delivering citizen-centric services.

Key Features of CCTNS:

- **Nationwide integration:** It connects all **17,130 police stations** across 28 states and 8 Union Territories. Recently **achieved 100% deployment**, including in remote areas like Manipur, Nagaland, and Lakshadweep.
- **Comprehensive crime database:** Stores records of accused persons, habitual offenders, proclaimed offenders, and crime-related data such as missing persons and stolen vehicles.

- **Analytical tools:** Generates crime statistics and detailed reports for analysis at the police station level.
- **Citizen services:** Enables tracking of complaints, verification requests, and case updates, making police processes more accessible.
- **Enhanced scope:** Integrated with the **Integrated Criminal Justice System (ICJS)**, connecting police data with courts, prisons, prosecution, forensics, and fingerprint databases.

RELIEF SCHEME

Context: The government has launched the Resilience & Logistics Intervention for Export Facilitation (RELIEF) Scheme.

3-component RELIEF

EXPORTERS WHO HAVE ECGC CREDIT INSURANCE COVER: ₹56 CR
 Consignments where bill of lading/airway bill issued from Feb 14-Mar 15. ECGC gives enhanced cover up to 100% of loss.

NON-ECGC-INSURED MSME EXPORTERS: ₹282 CR
 Bill of lading issued from Feb 14-March 15. Applicable for exporters who have not taken ECGC coverage. Overall ceiling of ₹50 L per exporter.

UPCOMING EXPORTS TO THE REGION: ₹159 CR
 Bill of lading/airway bill granted from Mar 16-Jun 15 except energy shipments. Premium paid by exporters to not increase beyond pre-disruption level.

ECGC may provide enhanced cover up to 95% of loss.

About the RELIEF (Resilience & Logistics Intervention for Export Facilitation) Scheme:

- It is aimed at supporting Indian exporters affected by extraordinary freight escalation, heightened insurance premiums and war-related export risks arising from disruptions in the Gulf and wider West Asia maritime corridor.
- It is a **time-bound and targeted intervention** launched under the **Export Promotion Mission (EPM)**.

Features:

- **Enhanced Risk Coverage (Past Shipments):** Exporters with existing ECGC cover for shipments between 14 February and 15 March 2026 receive up to 100% risk coverage for additional conflict-linked losses.
- **Support for Prospective Exports:** For shipments planned between 16 March and 15 June 2026, the government supports up to 95% risk coverage to maintain exporter confidence.
- **MSME Reimbursement:** Non-insured MSME exporters can claim up to 50% reimbursement (capped at ₹50 lakh per exporter) for extraordinary freight and insurance surcharges incurred during the initial disruption month.
- **Regional Scope:** Applies to all consignments destined for or transshipped through the UAE, Saudi Arabia, Kuwait, Israel, Qatar, Oman, Bahrain, Iraq, Iran, and Yemen.
- **Operational Reliefs:** Includes waivers of storage and dwell time charges at ports and procedural relaxations for stranded cargo coordinated by the IMG.
- **Real-time Monitoring:** ECGC will maintain a dashboard-based system for tracking claims and fund utilization, with periodic reviews by the EPM Steering Committee.
- **Implementation:** By Export Credit Guarantee Corporation Ltd.

Source: Centre announces ₹497 cr. RELIEF for exporters impacted by W.Asia crisis (The Hindu)

PROJECT INSIGHT INITIATIVE

Context: The Hindu’s opinion piece talks of AI powered tax governance in India and the associated challenges.

About Project Insight:

- Project Insight is an initiative by the **Income Tax Department** to make the tax system **more transparent and efficient**.

- It uses technology to closely monitor financial transactions, ensuring that taxpayers are paying their fair share.
 - In simple terms, this project uses data from various sources – like bank accounts, credit cards, and investments – to cross-check against the income and expenses that taxpayers report.
 - By linking these different data points, the government can more easily spot any discrepancies or signs of tax evasion.
 - Instead of relying solely on individuals to report their income accurately, Project Insight uses advanced analytics and technology to track financial activities.
 - This includes things like:
 - Bank transactions
 - Credit card payments
 - Stock market investments
 - Property transactions
 - It also helps to mine big data from social media to scrutinize potential tax evaders.
 - Project Insight is a step towards building a more accountable tax system, using technology to bridge the gaps in financial reporting.
- It focuses on helping taxpayers correctly disclose foreign assets and foreign-source income.
 - **First NUDGE Campaign:** The first NUDGE Campaign was launched in November 2024.
 - It targeted taxpayers flagged under **Automatic Exchange of Information (AEOI)** for not reporting foreign assets in AY 2024–25.
 - It resulted in: 24,678 taxpayers revising returns, disclosure of ₹29,208 crore worth foreign assets and declaration of ₹1,089.88 crore foreign-source income.
 - **Second NUDGE Campaign:** The second NUDGE Campaign was launched in November 2025.
 - Under the campaign, **SMSs and emails will be issued to such taxpayers** whose foreign assets appear to exist but have not been reported in the ITRs filed for AY 2025-26.
 - This is to **advise them to review and revise their returns** on or before 31st December 2025 to avoid penal consequences.
 - The campaign aims to **facilitate correct reporting in Schedule Foreign Assets (FA) and Foreign Source Income (FSI)** in ITRs.
 - Accurate and **complete disclosure of foreign assets and income** is a statutory requirement under the **Income-tax Act, 1961** and the **Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015**.

Source: AI powered tax governance in India and its challenges (The Hindu)

NUDGE INITIATIVE

Context: The Hindu's opinion piece talks of AI powered tax governance in India and the associated challenges.

About NUDGE Initiative:

- Full form: **Non-intrusive Usage of Data to Guide and Enable (NUDGE)** initiative
- Implementing agency: **Central Board of Direct Taxes (CBDT)**
- Nodal Ministry: **Ministry of Finance**
- **Aim:** To **strengthen voluntary tax compliance** through **data-driven, non-intrusive communication**.

Automatic Exchange of Information (AEOI)

- It is a system for the **regular exchange of financial account information between tax authorities of different countries** under international agreements developed by the **Organisation for Economic Co-operation and Development (OECD)**.
- Objective: To promote global tax transparency and curb tax evasion by enabling jurisdictions to access information

about their residents' foreign financial assets.

- The framework operates through major international standards such as
 - Common Reporting Standard (CRS)
 - Foreign Account Tax Compliance Act (FATCA)
- These frameworks **require financial institutions to identify and report accounts held by specified individuals and entities to their respective tax authorities.**
- AEOI significantly aids tax administrations in detecting undisclosed offshore assets, recovering tax revenue, and encouraging voluntary compliance.

IVFRT SCHEME

Context: The Union Cabinet has approved the continuation of the Immigration, Visa, Foreigners Registration & Tracking (IVFRT) Scheme for another five years, from April 1, 2026 to March 31, 2031.



About IVFRT Scheme:

- **The IVFRT platform** is aimed at integrating and streamlining immigration, visa issuance, and foreign registration processes in India through a secure, technology-driven framework.

- It was approved for a period of five years from 01 April, 2026 to 31 March, 2031.
- It was originally approved in 2010; the project has undergone multiple phases of expansion and extension.
- The latest approval comes in the backdrop of the recently enacted **Immigration and Foreigners Act, 2025.**

Key Features of IVFRT Scheme: The scheme will concentrate on three broad areas:

- Emerging technology innovations, transformation of core infrastructure and optimisation of technology-enabled service delivery.
- The scheme will modernize the immigration and visa ecosystem through adoption of emerging technologies, including mobile-based services and self-service kiosks for seamless and secure passenger movement.
- It will upgrade and expand core infrastructure across Immigration Posts, FRROs, and Data Centres to build a resilient and scalable system nationwide.

RoDTEP SCHEME

Context: Government restores RoDTEP rates and value caps to support exporters amid West Asia trade disruptions.

About Remission of Duties and Taxes on Exported Products (RoDTEP) Scheme:

- It was introduced through an amendment to the **Foreign Trade Policy 2015-20**, and it became effective for exports starting January 1, 2021.
- The primary aim of this scheme is **to offset the taxes and duties incurred on exported goods** that wouldn't otherwise be credited, reimbursed, or refunded in any way, and are integrated into the exported goods.
- It is **compliant with World Trade Organization (WTO)** norms and is

implemented via a **comprehensive end-to-end digital platform** to ensure transparency and efficiency.

- **Objective:**
 - Enforced to repeal and reduce taxes on exported products, thereby encouraging exports and increasing the number of exports in the country.
- The scheme is administered by the **Department of Revenue, Ministry of Finance.**
- It replaced the **Merchandise Export Incentive Scheme (MEIS).**
- **RoDTEP Scheme Eligibility Criteria:**
 - All sectors are covered under the scheme.
 - Labor-intensive sectors will be accorded priority.
 - Both manufacturer exporters and merchant exporters (traders) are eligible for the scheme.
 - The **exported products** should have **India as their country of origin** to be eligible for benefits under the scheme.
 - Special Economic Zone Units and Export Oriented Units are also eligible.
 - The scheme also applies to goods that have been exported via courier through e-commerce platforms.
 - Re-exported products are not eligible under this scheme.

KHELO INDIA SCHEME

Context: The inaugural Khelo India Tribal Games is being held from 25th March to 3rd April 2026 in Chhattisgarh.



About Khelo India Scheme:

- It was **launched in 2017** to give a platform to grassroots athletes and to **build sports infra** across India, turning India into a major sporting nation.
- It is a **central sector scheme** under **Ministry of Youth Affairs & Sports (MoYAS).**
- Its **implementation is co-terminus with the term of the 15th Finance Commission** (2021-22 to 2025-26), with an estimated outlay of Rs 3165.50 crore.
- Under the scheme, **Khelo India Youth Games, Khelo India University Games (KIUG) and Khelo India Winter Games** were set up as annual sporting events.
- Several Khelo India athletes have been inducted in the elite **Target Olympic Podium Scheme (TOPS)** over the years based on their performance.
- Talented players identified in priority sports at various levels will be provided **annual financial assistance of INR 5 lakh per annum for 8 years.**

About Khelo India Rising Talent Program (KIRTI) Programme:

- KIRTI Programme is **aimed at school children aged 9 to 18**, with two main objectives: discovering talent nationwide and using sports to reduce drug addiction and gadget distractions.
- It plans to conduct **20 lakh assessments through Talent Assessment Centres** to identify potential athletes.

- The programme aims to reach every block in India to connect with children interested in sports.
- KIRTI launched across 50 centres, assessing 50,000 applicants in its first phase across 10 sports, including athletics, boxing, and hockey.
- It features a **transparent selection process using IT and AI-based data analytics** to predict athletic potential.
- Nodal agency for implementation: **Sports Authority of India (SAI)**

Target Olympic Podium Scheme (TOPS):

- ✓ It was launched in 2014.
- ✓ It will focus on ensuring representation from High-Priority sports (Badminton, Boxing, Hockey, Archery, Shooting and Wrestling).
- ✓ Mission Olympic Cell has been created under Sports Authority of India (SAI) as a dedicated body to assist the athletes who are selected under TOPS.

SKILL INDIA MISSION

Context: The IndiaSkills National Competition has started in Noida, and is being organized under the aegis of the Skill India Mission.



Skill India

कौशल भारत - कुशल भारत

About the Skill India Mission:

- The Skill India Mission launched on **15th July 2015** (World Youth Skills Day).
- **World Youth Skills Day, declared by the UN General Assembly in 2014**, is celebrated to emphasize the strategic importance of skilling youth.
 - The 2025 theme focuses on empowering youth through AI and digital skills.
- **Nodal Agency:** Ministry of Skill Development & Entrepreneurship

Features of the Mission:

- Aims to **skill, reskill, and upskill India's youth by offering industry-relevant training** through a vast network of centers and programs.
- It seeks to address the increasing demand for employability, entrepreneurship, and quality job opportunities.
- **Over 6 crore individuals have been trained** under various schemes, including in emerging sectors like AI robotics, green energy, etc.
- In February 2025, the **restructured Skill India Mission was approved for 2022-23 to 2025-26** by merging PM Kaushal Vikas Yojana 4.0, PM National Apprenticeship Promotion Scheme (PM-NAPS) & Jan Shikshan Sansthan (JSS) Scheme.
- All courses and certifications are aligned with the **National Skills Qualification Framework (NSQF)** and integrated with DigiLocker & **National Credit Framework (NCrF)**.

Initiatives under the Mission:

- **PM Kaushal Vikas Yojana (PMKVY):**
 - PMKVY, aims to provide free, short-term, quality-assured skill training to enhance the employability of youth.
 - Phase 1 (2015-16) trained 19.85 lakh youth;

- Phase 2 (2016-20) aligned with initiatives like Make in India and Digital India, training 1.10 crore individuals;
- Phase 3 (2020-22) focused on Covid-19 warriors and skilling under the NEP 2020.
- Phase 4 (2022-26) emphasizes short-term training, reskilling, and upskilling while supporting initiatives like PM Vishwakarma and Green Hydrogen Mission.
- **Jan Shikshan Sansthan (JSS) Scheme:**
 - JSS is a community-based vocational training programme for non-literates, neo-literates, and school dropouts.
 - It offers low-cost, flexible skilling, aligned with PM JANMAN Scheme and Understanding of Lifelong Learning for All in Society (ULLAS) Scheme.
- **Pradhan Mantri National Apprenticeship Promotion Scheme (PM-NAPS):**
 - Aims to boost apprenticeship training by providing 25% stipend support Direct Benefit Transfer (DBT) for individuals aged 14–35 years.

National Skill Development Corporation (NSDC):

- It was **established in 2009 as a not-for-profit company by the Ministry of Finance** to promote skill development by catalyzing the creation of large, quality, and for-profit vocational institutions.
- The present equity base of NSDC is **Rs. 10 Crore - Ministry of Skill Development & Entrepreneurship (MoSDE), holds 49%** while the private sector holds the balance 51%.

RASHTRIYA VIGYAN PURASKAR

Context: The Government of India has invited nominations for the Rashtriya Vigyan Puraskar (RVP) 2026.



About Rashtriya Vigyan Puraskar:

- It is a new set of awards introduced by the Government of India in the field of **Science, Technology, and Innovation**.
- **Objective:** To recognize the notable and inspiring contributions made by scientists, technologists, and innovators individually or in teams in various fields of science, technology, and technology-led innovation.
- It is one of the highest recognitions in the field of science, technology, and innovation in India.

Eligibility:

- Scientists/ technologists/innovators working in government, private sector organizations, or any individual working outside any organization who have made **distinguished contributions** in terms of path-breaking research, innovation, or discovery in any field of **science, technology, or technology-led innovation** shall be eligible for the awards.
- **People of Indian origin** staying abroad with exceptional contributions benefiting Indian communities or society shall also be eligible for the awards.
- Scientists will be **selected across 13 domains**, namely Physics, Chemistry, Biological Sciences, Mathematics & Computer Science, Earth Science, Medicine, Engineering Sciences, Agricultural Science, Environmental Science, Technology & Innovation, Atomic Energy, Space Science and Technology, and Others.
- The representation from each domain/field, including **gender parity** will be ensured.

Categories of awards:

- **Vigyan Ratna (VR)** award will recognize **lifetime achievements** and contributions made in any field of science and technology.
- **Vigyan Shri (VS)** award will recognize **distinguished contributions** in any field of science and technology.
- **Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB)** award will recognize and encourage young scientists **up to the age of 45 years** who made an exceptional contribution in any field of science and technology.
- **Vigyan Team (VT)** award to be given to a team comprising **three or more scientists/researchers/innovators** who have made an exceptional contribution working in a team in any field of science and technology.

Decision and Ceremony:

- All nominations received for the RVP awards are placed before the **Rashtriya Vigyan Puraskar Committee (RVPC)**, headed by the **Principal Scientific Adviser (PSA)** to the Government of India.
- All Awards will have a Sanad and a medal.
- Prof. **Jayant Vishnu Narlikar** will be given the Vigyan Ratna award posthumously.
- Eight scientists have been selected for the Vigyan Shree award.
- Under the Vigyan Yuva category, 14 young scientists have been selected across various disciplines, while the Vigyan Team award is being given to **Team Aroma Mission CSIR** for its contributions in Agricultural Science.

Reports and Indices

CORRUPTION PERCEPTION INDEX 2025

Context: An opinion piece in the Hindu looks at deepening global corruption.

About the Corruption Perception Index:

- It is the most widely used global corruption ranking in the world.
- The index has been published annually by the non-governmental organization **Transparency International** since 1995.



Methodology Used

- It is an index which ranks countries “by their perceived levels of public sector corruption, as determined by expert assessments and opinion surveys.”
- It uses a scale of zero to 100, where “**zero**” is **highly corrupt** and “**100**” is **very clean**.
- It measures how corrupt each country’s public sector is perceived to be, according to experts and business people.
- The score for each country is derived from a minimum of three data sources, selected from 13 distinct corruption surveys and assessments.

- These sources are gathered by a range of reputed organizations, such as the World Bank and the World Economic Forum.

Key Findings of the 2025 report:

- **Global Average Decline:** For the first time in more than a decade, the global CPI average has dropped to just **42 out of 100**.
- The vast majority of countries (**122 out of 182**) score below **50**, indicating **serious corruption** problems worldwide.
- **Shrinking High Performers:** The number of countries scoring above **80** has shrunk from **12 a decade ago** to just **5 this year** (Denmark, Finland, Singapore, New Zealand, Norway).
- **Top and Bottom Performers:** Denmark (Score - **89**) ranks highest for the **8th consecutive time**, while **Somalia** and **South Sudan (9)** are at the bottom.
- **Venezuela (10)** and other **conflict-affected** or **repressive regimes** populate the lowest tiers.
- **India’s Position:** In 2025, India ranked **91st on the Corruption Perceptions Index (CPI) with a score of 39/100**, improving slightly from its 96th rank in 2024.
 - India (score 39, rank 91) **outperforms most South Asian neighbors** but lags behind Bhutan (71, 18), and China (43, 76).
 - India is tied with the Maldives (39, 91).
 - Others rank lower: Sri Lanka (35, 107), Nepal (34, 109), Pakistan (28, 136), Bangladesh (24, 150), with Afghanistan and Myanmar (16, 169).

Transparency International

- ✓ Transparency International (TI) is a premier global civil society organization dedicated to combating corruption by promoting transparency, accountability, and integrity across government, business, and civil society worldwide.
- ✓ It was founded in 1993 and **headquartered in Berlin, Germany.**
- ✓ Core Mission: The organization envisions a world free from corruption, which it defines as "the abuse of entrusted power for private gain." Its work spans government, business, civil society, and daily life.
- ✓ **Flagship Publication:** The organization is best known for its annual Corruption Perceptions Index (CPI). It also produces the Global Corruption Barometer.

Terms in News

ARTICLE 244 A



- The 22nd Amendment (1969) introduced **Article 244 A**, allowing Parliament to create an **autonomous region within Assam**. This region could include certain tribal areas **like Karbi Anglong**.
- In this autonomous region, there could be a **separate governing body, like a Legislature or Council of Ministers, or both**.
- Under the **Sixth Schedule**, there are **already councils with elected representatives** for decentralized governance in tribal areas. However, these councils have limited powers. **They can't control law enforcement, and their financial authority is also limited**.
- On the other hand, **Article 244 A accounts for more autonomous powers** to tribal areas. Among these, the most important power is the **control over law and order**.
- Article 244 A has **not yet been enforced by Parliament** through appropriate legislation.

AUTHORIZED ECONOMIC OPERATOR (AEO) PROGRAMME



About the AEO Programme

- AEO is a programme under the aegis of the **World Customs Organisation (WCO) SAFE Framework of Standards to secure and facilitate Global Trade**.
- The WCO in June, 2005, with a **view to secure the international supply chain**, adopted the SAFE Framework of Standards (WCO SAFE FoS).
- **AEO helps to build a closer partnership between the customs department and the trade industry**.

Indian Context

- WCO SAFE FoS is the basis of the Indian AEO programme.
- It is a **voluntary compliance programme which enables Indian Customs to enhance and streamline cargo security through close cooperation with stakeholders of the international supply chain**.
- It was launched by the **Central Board of Indirect Taxes and Customs (CBIC)** as a pilot in 2011 and revised in 2016.
 - CBIC functions under the Ministry of Finance.
- Under the AEO programme, an entity engaged in international trade is approved by CBIC and granted AEO status. Once

granted an AEO status, **they are entitled to faster clearances, deferred duty payments, and reduced inspection frequency.**

- Thus, an **entity with an AEO status can be considered a reliable trading partner and a secure trader.**

RAISINA DIALOGUE



- The 11th annual Raisina Dialogue is being held in New Delhi.
- It is an **annual conference on geo-politics & geo-economics**, which aims to address the most challenging issues faced by the world.
- It is a **component of India's "intelligence diplomacy,"** which, though not prominently featured in the public eye, plays a crucial role in the national security framework.
- The conference **takes place in New Delhi** and is attended by people from political, business, media, and civil society backgrounds.
- It is structured as a multi-stakeholder, cross-sectoral discussion, **involving heads of state, cabinet ministers and govt officials**, who are joined by thought leaders from the **private sector, media and academia.**

- Delhi-based think tank **Observer Research Foundation (ORF)**, along with the **Ministry of External Affairs**, hosts the conference.

PM'S SCIENCE, TECHNOLOGY & INNOVATION ADVISORY COUNCIL (PM-STIAC)



- The PM-STIAC is an overarching council that **aids the working of the Principal Scientific Advisor's (PSA) Office** and appraises the PSA in specific science & tech domains, help comprehend challenges, formulate interventions, develop a futuristic roadmap and **advise the Prime Minister accordingly.**
- It was **established in August 2018.**
- The PM-STIAC aims to facilitate, through its missions, the process of collaboration and focus needed to solve complex problems in a reasonable time-frame.
- The 9-member PM-STIAC is **headed by the PSA to the Union Govt.**
- **The office of the PSA was estd. by the Cabinet Secretariat in 1999.** The PSA's office aims to provide pragmatic and objective advice to the PM and cabinet on matters related to science, tech, & innovation with a **focus on its application in critical infra, economic and social sectors** in partnership with Govt departments, institutions and industry.


- The first PSA of India was Dr. APJ Abdul Kalam.

DIAMOND IMPREST AUTHORIZATION (DIA) SCHEME

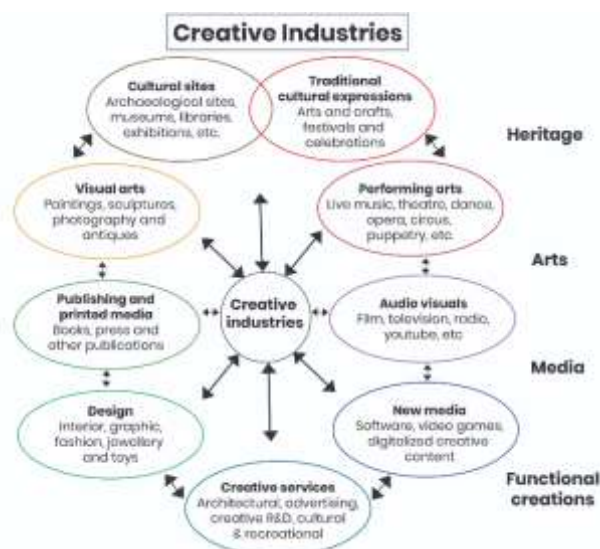
- It was launched by the Department of Commerce under the **Ministry of Commerce and Industry** to **bolster the global competitiveness of India's diamond sector**.
- It allows **duty-free import of natural cut and polished diamonds for export purposes**. It aims to retain India's leadership in the global diamond industry value chain by facilitating ease of doing business.
- It will be implemented starting April 1, 2025.

Features of the Scheme:

- **Duty-Free Import:** Duty-free import of natural cut and polished diamonds of less than ¼ Carat (25 Cents).
- **Export Obligation:** Requires a minimum 10% value addition to ensure beneficiation.
- **Eligibility:** Exporters with annual exports of at least USD 15 million.
- **Support for MSMEs:** Provides a level playing field for smaller exporters, enabling them to compete globally.
- **Global Beneficiation Practices:** Inspired by beneficiation policies in diamond-mining countries like Botswana, Namibia, and Angola, where manufacturers must establish cutting and polishing facilities.

 India processes over 90% of the world's diamonds and provides jobs to approx. 5 million people. India contributes 19% of total global diamond exports.

ORANGE ECONOMY



- The **creative industries** are a group of economic activities that are based on original ideas. They include **businesses centered around creativity**, such as: Design, Music, Architecture, Film, Video, Crafts, Visual arts, Fashion, TV, Radio, Literature, Computer games, etc.
- The creative industries are **also known as cultural industries or the Orange Economy**.
- It is the contribution made to the **economic and cultural value chain** by activities that involve formally or informally acquired skills and embody a huge amount of original ideas, skills, imagination, or social behaviours that are non-repetitive and are **adaptive to technological change and mechanization**.
- According to the United Nations Conference on Trade and Development (UNCTAD), the creative economy is seen as an evolving concept that builds on the **'interplay between human creativity and ideas and intellectual property, knowledge and technology'**.
- Creative industries are a significant source of commercial and cultural value in India. They contribute to **3.1% of global GDP**.

and are contribute about **8% of India's employment.**

- Estimates suggest that India's creative economy accounts for an overall market size of about \$36.2 billion.

ANAVARAN PORTAL



- Anavaran Portal is a **deforestation alert system that uses satellite data and machine learning** to monitor forest cover loss and send alerts to states.
- The portal has been developed and operated by the **Forest Survey of India (FSI)**. The system aims to support **near-real-time monitoring of forest cover loss using satellite-based information** and digital tools.
- The main objective of the portal is to help the Forest Survey of India monitor deforestation and **send alerts to states every 15 days** so that targeted field inspections can be carried out.
- The alert system is based on the Google Earth Engine (GEE) platform and uses satellite images as input data.

COLOMBO SECURITY CONCLAVE (CSC)



- The CSC is a key regional platform aimed at enhancing **security cooperation among Indian Ocean Region (IOR) countries**. It aims to promote regional security by addressing transnational threats that affect all member nations.
- Permanent secretariat: **Colombo**
- The CSC traces its roots to a **2011 trilateral** maritime security grouping comprising **India, Sri Lanka, and the Maldives**.
- It was revitalized and **upgraded in 2020**, evolving into a broader security cooperation platform that reflects contemporary regional challenges.
- **Mauritius** joined as a full member in 2022 and **Bangladesh** joined in 2024.
- **Seychelles** became a full member in November 2025.
- The CSC's agenda is **built around five pillars**, representing key security priorities in the Indian Ocean Region:
 - Maritime Safety and Security
 - Countering Terrorism and Radicalisation
 - Combating Trafficking and Transnational Organised Crime
 - Cyber Security and Protection of Critical Infrastructure and Technology
 - Humanitarian Assistance and Disaster Relief (HADR)

UN COMMISSION ON THE STATUS OF WOMEN (CSW)



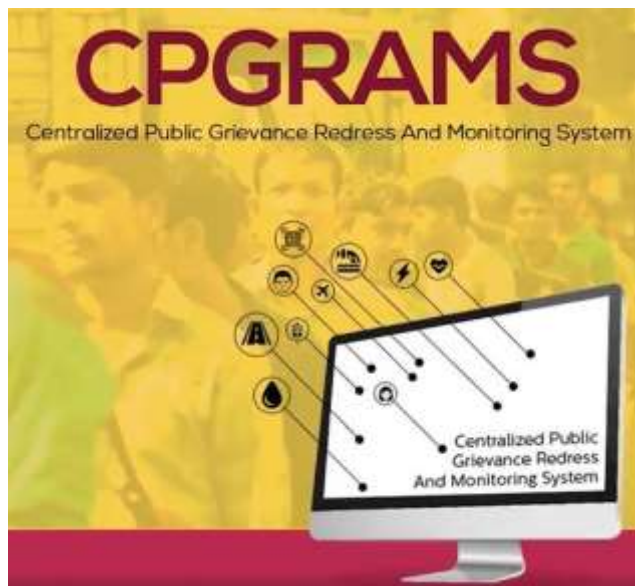
- It works under the **UN Economic and Social Council (ECOSOC)** and is the primary organ for global policy-making on women's rights.
- The CSW is the **principal global intergovernmental body exclusively dedicated to the promotion of gender equality** and the empowerment of women.
- It was **established in 1946**, shortly after the founding of the United Nations.
- It aims to promote women's rights in political, economic, civil, social, and educational fields and to ensure that gender equality is integrated into all UN activities and national policies.
- It formulates policies, standards, and norms that define the rights of women and girls globally, such as the landmark **Beijing Declaration (1995)**.
- It reviews the implementation of agreements by member states and monitors the **progress of the SDGs implementation by 2030 (specifically SDG 5)**.
- Each year, the commission focuses on a priority theme to create actionable strategies for member states.
- It brings global attention to the highest **price paid by women in conflict zones**, from Afghanistan and Gaza to Ukraine and Sudan.

DIMETHYL ETHER (DME)



- It is a **synthetically produced, clean-burning alternative fuel** that can **replace both diesel and Liquefied Petroleum Gas (LPG)**.
- It is a key component of the **Methanol Economy program led by NITI Aayog**, aimed at reducing crude oil imports and carbon emissions. It is primarily produced through two main routes:
 - indirect synthesis (dehydrating methanol)
 - direct synthesis (from syngas)
- Like LPG, it can be **liquefied under moderate pressure**, making it easy to store and transport in cylinders and has **excellent ignition quality**.
- DME burns **without producing soot or smoke**. It significantly **reduces emissions** of particulate matter, nitrogen oxides, and sulphur oxides.
- DME can be **produced from domestic resources** like coal, biomass, municipal solid waste, and even captured carbon dioxide.
- It can be **blended with LPG for household cooking** without requiring major infrastructure changes.
- In 2023, **IIT Kanpur developed India's first 100% DME-fueled tractor**.

CPGRAMS



- It stands for **Centralised Public Grievance Redress and Monitoring System (CPGRAMS)**.
- It is an **online platform available to the citizens 24×7 to lodge grievances** to public authorities on any subject related to service delivery.
- It provides citizens with a user-friendly way to register complaints or grievances related to **various govt departments and agencies**.
- It was created in June 2007 by the DARPG (**Dept. of Administrative Reforms & Public Grievances**).
- **Prime Minister** is the supreme head of the CPGRAMS, with a minister of state reporting to the PM.
- Citizens can track grievance status using a **registration ID & file appeals if dissatisfied** with the resolution.
- As of 31st October 2025, around **1.12 crore grievances have been redressed** on CPGRAMS from 2020 to 2025. In 2024, an all-time high of 23.24 lakh grievances was addressed.
- The govt. has done many reforms to make grievance redressal more efficient, including **mapping over one lakh**

grievance officers and reducing pendency to 54,339 grievances.

Guidelines under CPGRAMS:

- **Reduction in Grievance Redressal Time:** Maximum time for resolving public grievances is 21 days. If more time is needed, an interim reply must be provided, indicating the reason and expected timeline for resolution.
- **Dedicated Officers and Nodal Officers:** Ministries should appoint a nodal officer with sufficient rank to ensure timely and quality resolution.
- **Appeal Mechanism:** Appeal process in CPGRAMS requires appointing an officer of Additional/Joint Secretary rank as Nodal Appellate Authority.
- **Dedicated Grievance Cells:** A dedicated grievance cell shall be set up in every ministry with staff having domain knowledge of schemes and the skills for data analytics and root cause analysis.

DISTRICT MINERAL FOUNDATION (DMF)



- As per the 2015 Amendment to the **Mines and Minerals Development and Regulation Act, 1957** - in every district affected by mining-related operations, the **state government shall, by notification, establish a trust as a non-profit body** to be called the District Mineral Foundation.
- Every mining lease holder of will **pay a fraction of royalty, not exceeding one-**

third of the royalty, to the DMF as per rates prescribed by Union Govt. This fund will be used for **welfare of the people in mining affected areas**.

- The composition and functions of the DMF shall be such as may be prescribed by the State Government.
- The functioning of the DMF as per the states' DMF Rules are in accordance with **central guidelines under the PM Khanij Kshetra Kalyan Yojana** (Ministry of Mines).

Objectives of DMF:

- **Implement developmental & welfare projects** in mining affected areas that complement the existing schemes of State and Union Government.
- **Minimize/mitigate adverse impacts**, during and after mining, on the health of people and on the environment, in mining districts.
- **Ensure sustainable livelihoods** for the affected people in mining areas.

Implementation of DMF:

- At least **60% the fund will be utilized for "High Priority Areas"** like Drinking water supply, Environment preservation & pollution control measure, Health care, Education, etc.
- Rest will be used for **"Other Priority Areas"** such as Infra, Energy, Irrigation, Livelihoods, etc.



In the context of mining, a royalty is a payment made to the government or landowner for the privilege of extracting or selling minerals from their land, typically calculated as a percentage of the revenue or production.

SPECIAL 301 REPORT



- India has been placed on the 'priority watch' list of the **US Trade Representative (USTR) office's Special 301 Report** on intellectual property rights (IPRs).
- It is an annual publication by the USTR, mandated under the Trade Act of 1974. It identifies countries that **do not provide adequate protection of IPRs** or fail to ensure fair market access for US IPR holders.
- Countries are classified into three categories: Priority Foreign Country, Priority Watch List, and Watch List.
 - Designation as a **Priority Foreign Country** can cause investigations and imposition of trade sanctions.
 - Countries on the **Priority Watch List** are considered to have serious IPR-related deficiencies that warrant heightened US scrutiny.
 - Nations with IPR concerns, but not deemed urgent, are placed on the **Watch List**.
- **India, along with China, Indonesia, Russia, and Argentina**, has been placed on the Priority Watch List.

DESIGNING INNOVATIVE SOLUTIONS FOR HOLISTIC ACCESS TO JUSTICE (DISHA) SCHEME



- It was launched by the **Ministry of Law and Justice** in order to provide a comprehensive, holistic, integrated and **systemic solution on access to justice at pan India level**.
- It aims to secure “Justice” to the people of India as enunciated in the Preamble and under **Articles 39A, 14 and 21** of the Constitution of India.
- It aims to design and consolidate various initiatives to provide citizen- centric delivery of legal services.
- There are **three components** under DISHA at present:
- **Tele-Law: Reaching the Unreached:**
 - To strengthen pre litigation legal advice and consultation, this connects the citizen with the Panel lawyers through the use of video /Teleconferencing facilities available at the Common Service Centres (CSCs) and via Tele-Law Mobile App.
- **Nyaya Bandhu Programme:**
 - Nyaya Bandhu (Pro Bono Legal Services) programme aims to provide free legal assistance and counsel to the marginalized sections.

- Nyaya Bandhu Mobile Application, for android and iOS phones, has been developed to connect the registered Pro Bono Advocates with the registered applicants.

- **Legal Awareness Programmes:**

- To provide for a more robust framework, Legal Service Institutions network at the National, State and District and Taluk level, constituted under the Legal Services Authorities, Act, 1987.

NATIONAL DENTAL COMMISSION (NDC)



- It is a **statutory and apex body responsible for regulating dental education, professional conduct, and institutional standards** across India.
- It has been constituted under **National Dental Commission (NDC) Act, 2026**. It will replace the Dental Council of India (DCI).
- It includes a chairperson and a part-time member.
- It will introduce essential and regulatory **reforms in dental education and enhance access to affordable oral healthcare** across the country.
- It will **frame regulations** to implement the provisions of the NDC Act, 2026.

- It will conduct **rating and assessment of dental institutions**,
- It will also **frame guidelines for fee regulation** in private dental colleges.

AGRIVOLTAICS



- Agrivoltaics, also known as AgriPV or agrophotovoltaics (APV), is the **simultaneous use of land for solar energy generation and agriculture**.
- Unlike traditional solar farms where panels are ground-mounted on bare land, AgriPV is designed to **allow crops to grow, livestock to graze, or pollinator habitats to thrive underneath or between the solar panels**.
- AgriPV systems optimize land use by placing solar panels in specific configurations to balance electricity production with agricultural needs.

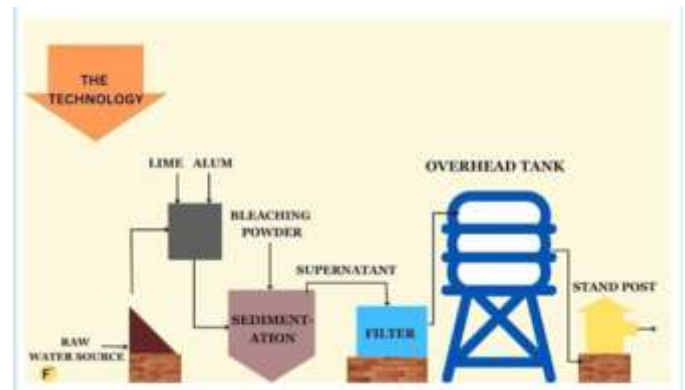
Types of AgriPV:

- **Elevated (Stilted) Systems:** Panels are mounted on tall, providing enough clearance for tractors and farming machinery to operate underneath.
- **Inter-row (Ground-mounted) Systems:** Panels are placed at lower heights but with wide spacing between rows to allow crops to be cultivated between arrays.
- **Vertical Systems:** Panels are mounted vertically (like walls), often at the periphery of fields, capturing sunlight primarily during sunrise and sunset while

leaving the maximum amount of ground open for farming.

- **PV Greenhouses:** Solar modules are integrated into the roof or exterior of a greenhouse to regulate internal temperature and power its climate control system.

NALGONDA TECHNIQUE



- The Nalgonda technique is a simple and cost-effective method used for **removing excess fluoride from drinking water**.
- It was developed by the **National Environmental Engineering Research Institute (NEERI), Nagpur**, in 1974.
- The technique involves the **sequential addition of three primary chemicals**:
 - **Alum (aluminium sulphate):** Acts as a coagulant that reacts with fluoride ions.
 - **Lime (calcium oxide):** Added to maintain the pH of the water and ensure proper flocculation.
 - **Bleaching powder:** Used for disinfection to remove pathogens.
- **Limitations of the technique:** It produces high amounts of sludge, requires daily chemical addition and is less effective in water with high total dissolved solids or hardness

ASYMMETRIC WARFARE



- Asymmetric warfare is a type of conflict **where there is a significant imbalance in the military power, resources, or technology between the opposing sides.**
- Instead of a direct force-on-force conventional battle, the **weaker party uses unconventional tactics, unpredictable methods, and low-cost technologies** to exploit the vulnerabilities of the more powerful opponent.

Types of Asymmetric Warfare:

- **Electronic & Cyber Warfare:** Jamming communication and navigation systems (e.g., GPS/GNSS).
- **Unconventional Naval Tactics:** Using sea mines, fast attack boats, and suicide drone boats.
- **Aerial Drone Strikes:** Utilizing low-cost loitering munitions to bypass expensive air defense systems.
- **Economic Disruption:** Targeting critical maritime chokepoints to cause global price volatility.

Factors Causing Asymmetric Warfare:

- **Cost-Effectiveness:** Small actors can cause massive damage with minimal investment.
- **Geographical Advantage:** Leveraging chokepoints to negate the enemy's numerical superiority.
- **Psychological Deterrence:** Creating fear and uncertainty to halt commercial activity.

VARIABLE RATE REPO (VRR) AUCTIONS



- A Variable Rate Repo (VRR) is a monetary policy tool **used by the RBI to inject liquidity into the banking system** when cash becomes scarce.
- Unlike the fixed-rate repo, the **interest rate in a VRR is determined through a competitive bidding**
- By infusing cash, the RBI ensures that **banks have enough funds to meet daily requirements**, preventing the **Call Money Rate** (the rate at which banks lend to each other) from spiking far above the policy Repo rate.
- It targets **immediate, temporary deficits** (usually 1 to 14 days) caused by seasonal factors like tax payments or festivals.
- It **allows the market to determine the cost of funds** based on actual demand. These are tactical tools, **unlike Open Market Operations, which provide long-term liquidity.**
- Like all repo transactions, these are **backed by high-quality govt. bonds.**

How it Works:

- **Announcement:** RBI notifies banks of its intent to lend a specific amount for a set duration of days.
- **Bidding:** Banks submit bids stating the amount they want to borrow & interest rate they are willing to pay.

- **Allotment:** RBI accepts bids starting from the highest rate offered down to a cut-off rate, which is the lowest rate at which funds are disbursed.
- **Collateral:** Banks provide government securities to RBI as collateral, which they repurchase/buy back at the end.
- and provide strategic direction.

MOIST HEATWAVE



- Moist heatwaves are **triggered by a combined impact of high temperatures and elevated humidity levels in the atmosphere.**
- The best way to measure the combined effect of humidity and temperature is **'wet bulb temperature'**.
- Wet bulb temperature is the **lowest temperature to which air can be cooled by the evaporation of water into the air at constant pressure.**
- This is a process happening on human skin when people sweat.
- The globally accepted level for wet bulb temperature that forms the limit of human survivability is 35°C.

Impact of Moist Heatwaves on Human

- **When air is already humid, sweat cannot evaporate from skin, leaving the body unable to cool itself.** This can lead to heat exhaustion and fatal heatstroke within hours.
- It is because high humidity impairs evaporation, limiting the human body's ability

to dissipate metabolic heat and regulate core temperature.

- In such circumstances, the physiological strain on the human body intensifies, exacerbating the risks of cardiovascular and respiratory illnesses.
- **A thermoregulatory failure can lead to hyperthermia, heat exhaustion, and fatal heatstroke in extreme cases.**

INDIAN COMPUTER EMERGENCY RESPONSE TEAM (CERT-IN)



- It is the **National Nodal Agency for responding to computer security incidents as and when they occur.**
- It is a functional organization of the **Ministry of Information & Electronics Technology, Government of India.**
- **Objective:** Securing Indian cyberspace.
- CERT-In has been operational since **January 2004.**
- The constituency of CERT-In is the Indian cyber community.
- CERT-In has been designated under **Section 70B of the Information Technology Act, 2000**, to serve as the national agency to perform the following functions in the area of cyber security:
 - Collection, analysis, and dissemination of information on cyber incidents.
 - Forecasts and alerts of cybersecurity incidents.

- Emergency measures for handling cybersecurity incidents.
- Coordination of cyber incident response activities.
- Issue guidelines, advisories, vulnerability notes, and white papers relating to information security practices, procedures, prevention, response, and reporting of cyber incidents.
- Such other functions relating to cyber security as may be prescribed.
- To perform these functions, CERT-In is empowered to call for information and issue directions to service providers, intermediaries, data centers, body corporates, and any other person.
- **CERT-In provides services to organizations in the Government, Public, and Private sectors.** In addition, CERT-In provides services to individuals and home users as well.
- CERT-In collaborates with international counterparts to share information regarding emerging threats, vulnerabilities, and malware.
- CERT-In creates awareness on security issues through dissemination of information on its website (<https://www.cert-in.org.in>) and operates a 24×7 incidence response help desk.
- Disclosure of information will be followed in accordance with Indian Constitutional laws.
- To ensure effective governance, a **Review Committee oversees CERT-In's operations.** This committee includes but is not limited to representatives from various government ministries, such as:
 - Ministry of Law and Justice
 - Dept. of Telecommunications
 - Ministry of Home Affairs
 - Group Coordinator for Cyber Law and e-Security

JALLIKATTU



- The term Jallikattu is a union of two words - 'Calli' (coins) and 'Kattu' (tie), which denotes a bundle of coins tied to the bull's horns.
- Jallikattu is a 2,000 years old competitive **bull taming sport** in **Tamil Nadu** which contestants attempt to tame a bull for a prize, wherein if they fail, the bull owner wins the prize.
- It is celebrated in the second week of January at the time of the **Pongal** (harvest) festival.
- **Kangayam, Pulikulam, Umbalachery, Bargur and Malai Maadu** are among some native cattle breeds reared for Jallikattu.
- Its first references date back to a seal discovered at Mohenjodaro, which is dated between 2,500 BC and 1,800 BC.
- Back then, it was called **Eru Thazuval**, meaning "embracing the bull."
- Jallikattu also finds mention in Silappadikaram, one of the great Tamil epics from the Sangam age.
- The best guide to the cultural universe of Jallikattu is C S Chellappa's brilliant novella, 'Vaadivasal' (Arena), written in the 1940s.

Judicial Timeline:

- **2014 (Animal Welfare Board of India v. A. Nagaraja):** The Supreme Court banned

Jallikattu, ruling it inherently cruel and a violation of the PCA Act.

- **2017 Amendment:** Following massive protests, the Tamil Nadu government amended the PCA Act to exclude Jallikattu from the definition of "cruelty" under specific regulations.
- **2023 Landmark Ruling:** A five-judge Constitution Bench unanimously upheld the 2017 State amendments, stating that the legislature is the appropriate body to decide if a practice is part of cultural heritage.

Current Status (2025–2026 Updates)

- The Tamil Nadu government continues to issue strict Standard Operating Procedures (SOPs) for events in 2025 and 2026 to ensure public safety and animal welfare.
- Events must be held at notified locations with mandatory registration of bulls and participants with the Animal Welfare Board.

NUCLEIC ACID TESTS

- The Supreme Court has agreed to examine whether the Nucleic Acid Test (NAT) should be made compulsory in blood banks to ensure safer blood transfusion practices.
- Nucleic Acid Test (NAT) is a highly sensitive **molecular diagnostic technique** that detects the genetic material (DNA or RNA) of viruses in donated blood.
- It is capable of identifying infections such as Human Immunodeficiency Virus (HIV), Hepatitis B, and Hepatitis C.
- Unlike traditional serological tests, **NAT reduces the "window period", the time between infection and detectability, thereby enhancing blood safety.**
- Currently, many blood banks in India primarily use Enzyme-Linked Immunosorbent Assay (ELISA) tests, which

are less expensive but comparatively less sensitive during early infection stages.



ALMA TELESCOPE

- **Location:** The Atacama Large Millimeter/submillimeter Array (ALMA) is a radio telescope located in the **Atacama Desert in Chile.**
- It is a state-of-the-art radio-telescope that studies celestial objects at millimetre and submillimetre wavelengths.
- It has been fully functional since 2013.
- It was designed, planned and constructed by the US's National Radio Astronomy Observatory (NRAO), the National Astronomical Observatory of Japan (NAOJ) and the European Southern Observatory (ESO)



Properties of ALMA Telescope

- It also has extraordinary sensitivity, which allows it to detect even extremely faint radio signals.

- It consists of 66 high-precision antennas, spread over a distance of up to 16 km in the Atacama Desert of northern Chile.
- These antennas can be moved closer together or farther apart for different perspectives – like the zoom lens of a camera.

Major Discoveries of ALMA Telescope

- In 2013 it discovered starburst galaxies earlier in the universe's history than they were previously thought to have existed.
- It provided detailed images of the protoplanetary disc surrounding HL Tauri — a very young T Tauri star in the constellation Taurus, approximately 450 light years from Earth.
- It helped scientists observe a phenomenon known as the **Einstein ring**.
- The Einstein ring occurs when light from a galaxy or star passes by a massive object en route to the Earth, in extraordinary detail.

CARBON 14

- **Carbon has three main isotopes:** carbon-12, carbon-13, and carbon-14. The first two are stable.
- **Carbon-14 is a radioactive isotope of carbon.**
- It is created in the atmosphere through the bombardment of nitrogen by cosmic rays.
- It has six protons and eight neutrons in its nucleus.
- By contrast, most of the carbon in our bodies and in the outside world, known as carbon-12, has six protons and six neutrons.
- Crucially, those two extra neutrons make the nucleus of a carbon-14 atom unstable so that it decays radioactively into an atom of nitrogen.
- It is used in radiocarbon dating to determine the age of organic substances by measuring its decay over time.

About Radiocarbon Dating, or Carbon-14 Dating

- It is a method that provides objective age estimates for carbon-based materials that originated from living organisms.
- It is based on the fact that living organisms—like trees, plants, people, and animals—absorb carbon-14 into their tissue.
- When they die, the carbon-14 starts to change into other atoms over time.
- **Carbon-14 has a half-life of approximately 5,730 years** (i.e., half the amount of the isotope present at any instant will undergo spontaneous disintegration during the succeeding 5,730 years).
- Because carbon-14 **decays at this constant rate, an estimate of the date at which an organism died can be made by measuring the amount of its residual carbon-14.**
- The technique was developed in the late 1940s at the University of Chicago by a team led by chemistry professor **Willard Libby, who would later receive the Nobel Prize for the work.**
- It has proved to be a versatile technique of **dating archaeological specimens from 500 to 50,000 years old.**
- Over the years, carbon-14 dating has also found applications in geology, hydrology, geophysics, atmospheric science, oceanography, paleoclimatology, and even biomedicine

BUREAU OF ENERGY EFFICIENCY



- It is a **statutory body which was established in 2002 under the provisions** of the Energy Conservation Act, 2001.
- **Objective:** The primary objective of BEE is to reduce energy intensity in the Indian economy.
- **Nodal Ministry:** Ministry of Power.

Function and Duties of Bureau of Energy Efficiency

- It coordinates with designated consumers, designated agencies and other organizations; recognizes, identifies and utilizes the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act.
- The EC Act provides for regulatory and pro-motional functions which are assigned to the organisation.
- Regulatory functions
 - Develop minimum energy performance standards for equipment and appliances under Standards and Labelling
 - Develop minimum energy performance standards for Commercial Buildings
 - Develop Energy Consumption Norms for Designated Consumers

Schemes of Bureau of Energy Efficiency

- National Mission for Enhanced Energy Efficiency (NMEEE), Energy Conservation Building Code (ECBC), Standards and Labeling Scheme, Municipal Demand Side Management (MuDSM) Scheme, Agricultural Demand Side Management (AgDSM) Scheme.

MOONSHOT PROJECT

- It is **to develop brain co-processors that combine neuromorphic hardware and AI algorithms to enhance or restore brain function.**

- Brain co-processors are an emerging technology aimed at enhancing the human brain's natural abilities in ways relevant to real-life situations.
- The project aims to build an **AI-powered, closed-loop device that connects to different parts of the brain in order to help restore smooth, coordinated movement.**
- It is a multidisciplinary endeavour that evolved from a pilot project seeded by IISc's Brain, Computation and Data Science initiative.
- It is funded by the Pratiksha Trust.
- **Objective:** To develop both implantable and non-invasive brain co-processors that can decode brain activity from neural recordings, process it with an AI algorithm, and re-encode signals back into the brain via neural stimulation or neurofeedback.
- It will lay the **foundation for a first-of-its-kind brain co-processor that restores complex sensorimotor function after stroke.**
- **Significance:** The co-processors will be deployed towards cognitive rehabilitation of stroke survivors, to restore critical functions such as goal-directed reach and grasp abilities.

LOW TEMPERATURE THERMAL DESALINATION TECHNOLOGY

- It is a process under which **the warm surface sea water is flash evaporated at low pressure and the vapour is condensed with cold deep sea water.**
- The LTTD technology **does not require any chemical pre and post-treatment of seawater** and thus the pollution problems are minimal and suitable for island territories.



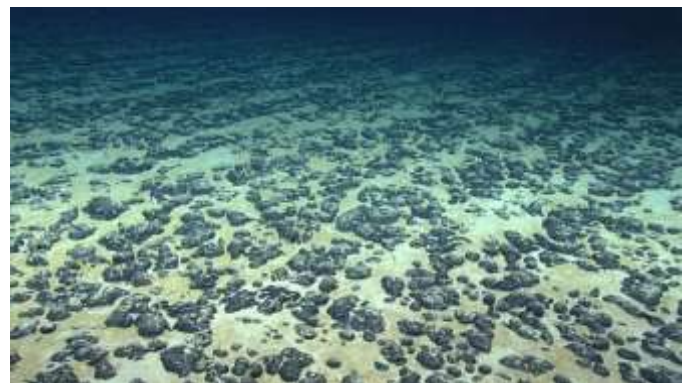
Working Principle

- This technique works on the principle that water in the ocean 1,000 or 2,000 feet below is about 4° C to 8° C colder than surface water.
- So, salty surface water is collected in a tank and subject to high pressure (via an external power source).
- This pressured water vapourises and this is trapped in tubes or a chamber.
- Cold water plumbed from the ocean depths is passed over these tubes and the vapour condenses into fresh water and the resulting salt diverted away.
- It produces potable water without the use of chemical additives or high-pressure membranes.
- **Significance:** Since no effluent treatment is required, it gives less operational maintenance problems compared to other desalination processes.
- The **first LTTD plant in Lakshadweep was commissioned in Kavaratti in 2005.**

DARK OXYGEN

- It is the **oxygen that is being produced thousands of feet below the ocean surface, without any light or photosynthesis.**
- The phenomenon was first observed in 2013 while studying the Clarion-Clipperton Zone, an area in the Pacific Ocean between Mexico and Hawaii

- Until now, it was thought that oxygen was created only through photosynthesis, a process that requires sunlight.
- Oceanic plankton, drifting plants, algae, and some bacteria are the primary elements attributed to the production of oxygen in the ocean. All these organisms are capable of photosynthesis.
- The production of oxygen at such depths is thought to be impossible because there isn't enough sunlight for plants to do photosynthesis.
- However, in this case, oxygen is not being produced by plants.
- The **oxygen comes out of polymetallic nodules that are similar in resemblance to lumps of coal.**
- These nodules, made up of metals like manganese, iron, cobalt, nickel, copper, and lithium, produce oxygen without the process of photosynthesis.
- These nodules generate enough electricity to drive electrolysis, which splits water molecules apart and releases oxygen.
- The researchers think the same process-battery-powered oxygen production that requires no light and no biological process – could be happening on other moons and planets, creating oxygen-rich environments where life could thrive.



ASMITA INITIATIVE

- It is part of Khelo India's **gender-neutral mission to promote sports among women through leagues and competitions.**
- ASMITA leagues not only aim to increase the participation of women in sports but also to utilize the leagues as a platform for the identification of new talent across the length and breadth of India.
- **Objective:** Inclusive and grassroots-driven sports development.
- The Khelo India ASMITA league is a core component of the 'Khelo Bharat Niti,' promoting sports for nation-building and women's empowerment.
- **The Sports Authority of India (SAI)** supports National Sports Federations in conducting Khelo India women's leagues across multiple age groups at both zonal and national levels.
- Till now, the ASMITA League has witnessed participation of almost 3 lakh women in 33 disciplines across 2600 leagues.
- **Nodal Ministry:** Ministry of Youth Affairs and Sports.

Khelo India Initiative

- It is a **flagship Central Sector Scheme of the Ministry of Youth Affairs & Sports, Government of India.**
- It is aimed at promoting mass participation and sporting excellence.
- Khelo India Games have been declared an **'Event of National Importance'** in 2020 under the Sports Broadcasting Signals Act, 2007.

WHITE PHOSPHORUS



- White (sometimes called yellow) phosphorus is a **white to yellow waxy solid with a garlic like odour.**
- **Properties:** It **ignites spontaneously** in air at temperatures above 30 °C and continues to burn until it is fully oxidized or until deprived of oxygen.

Applications of White phosphorus

- It is often used by militaries to **illuminate battlefields, to generate a smokescreen and as an incendiary.**
- It is used for military purposes in grenades and artillery shells to produce illumination, to generate a smokescreen and as an incendiary.
- Its major industrial uses are in the production of **phosphoric acid, phosphates and other compounds.**
- Phosphates are used to manufacture a range of products including fertilizers and detergents. Phosphorus has been used as a rodenticide and in fireworks.

Impact of White phosphorus on Humans

- It is harmful to humans by all routes of exposure.
- The smoke from burning phosphorus is also harmful to the eyes and respiratory tract due to the presence of phosphoric acids and phosphine.

- It can cause deep and severe burns, penetrating even through bone.

GPS SPOOFING



- GPS spoofing, also known as GPS simulation, refers to the **practice of manipulating or tricking a GPS receiver by broadcasting false GPS signals.**
- It **involves manipulating navigation data with malicious intent.**
- Unlike jamming, which blocks GPS signals, spoofing **involves transmitting fake satellite signals to override genuine ones.**
- The aircraft's navigation systems pick up these counterfeit signals and calculate wrong data for position, altitude, time, and speed.
- The aim is for the target to act on false navigation information. **The fake signals over-ride the genuine satellite signals using specialised hardware or software.**
- Since GPS satellite signals are weaker, the receiver considers the amplified spoofed signals as authentic.
- It involves sending a fake signal to an aircraft that the onboard computers believe is real. Instead of the navigation system failing, it shows the pilot a completely false location.
- **Spoofing is often reported in**
 - **Conflict zones**
 - **Military action areas**

JOHA RICE



- It is an indigenous rice of **Assam.**
- It is an indigenous aromatic rice variety known for its distinct fragrance, fine grain texture and rich taste.
- It is grown in the **Sali/ Kharif season.**
- Major Joha varieties included in this are Kola Joha, Keteki Joha, Bokul Joha and Kunkuni Joha.
- This rice is also **rich in several antioxidants, flavonoids, and phenolics.**
- It has got a Geographical Indication (GI) tag in 2017.
- This rice variety has two unsaturated fatty acids viz., linoleic acid (omega-6) and linolenic (omega-3) acid.
- These essential fatty acids (which humans cannot produce) can help maintain various physiological conditions

Geographical Indication Tag

- It is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin.
- This is typically used for agricultural products, foodstuffs, wine and spirit drinks, handicrafts and industrial products.
- **The Geographical Indications of Goods (Registration and Protection) Act, 1999** seeks to provide for the registration and better protection of geographical indications relating to goods in India.
- This GI tag is valid for **10 years** following which it can be renewed.

SUJAL GAON ID



- It is a **scheme-based unique digital identifier that enables complete digital mapping of rural piped water supply assets.**
- The Sujal Gaon IDs across 31 States/ UTs have been created, linked to 67,000 Sujalam Bharat IDs.
- Each Sujalam Bharat ID integrates the scheme's infrastructure ID and service area ID, creating a comprehensive digital footprint of rural water service delivery.
- It is linked with the "Sujalam Bharat" national digital architecture which will provide source to tap mapping of the entire rural water supply chain through unique Sujal Gaon IDs/ Service Area ID for every village.
- It was launched by the **Ministry of Jal Shakti under the Jal Jeevan Mission.**

About Jal Jeevan Mission

- It was launched on August 15, 2019.
- JJM is envisioned to provide safe and adequate drinking water through individual Functional Household Tap Connections (FHTCs) by 2024 to all households in rural India.
- It is based on a community approach to water and will include extensive Information, Education and communication as key components of the mission.
- **Nodal Ministry:** Ministry of Jal Shakti.
- **Funding Pattern**
 - 50:50 between Centre and States

- 90:10 for Himalayan and North-Eastern States
- In case of UTs, 100% of the funding is provided by the Central government.

FORCE MAJEURE

- The concept of force majeure refers to an **extraordinary event rendering the legal obligations between two or more contractually bound parties impossible to fulfill.**
- The phrase comes from French and literally means "**superior force**".
- It is related to the concept of an act of God, an event for which no party can be held accountable. This type of **event must be entirely beyond the parties' reasonable control.**
- As a precautionary measure against breach of contract, many commercial agreements contain force majeure contract clauses enumerating a list of major events that could result in non-performance of contractual duties.
- Force majeure does not encompass events that are predictable, preventable, or controllable, or that result from the negligence or malfeasance of one or more parties.
- Force majeure incidents typically include **wars, natural disasters (e.g., earthquakes), terrorist attacks, epidemics, and civil unrest, such as riots**
- In India, the doctrine of force majeure is governed by section 56 of the **Indian Contract Act, 1872 ("Indian Contract Act")**
 - It provides that a contract becomes void if an act to be performed under the contract becomes impossible after the contract is made, or, by reason of some event, which the promisor could not prevent, the act to be performed becomes unlawful.
- Force majeure conflicts with the concept of "**pacta sunt servanda,**" a principle in

international law that agreements must be kept and not wriggled out of.

SEJJIL MISSILE



- It is a two-stage, **solid-fuel medium-range ballistic missile (MRBM) developed by Iran.**
- Iran started working on the Sejjil system in the early 1990s. It was first tested in 2008.
- Because of its high-altitude manoeuvring ability, it has been nicknamed the “dancing missile”, a reference to its capability to evade missile defence systems.
- The weapon is also known by several other names, including Sajjil, Ashoura, and Ashura

Features

- The missile is around 18 metres long, has a diameter of about 1.25 metres.
- It weighs roughly 23,600 kilograms.
- Its solid-fuel design offers a strategic advantage, allowing it to be prepared and launched more quickly than older liquid-fuel systems like the Shahab series.
- It has an estimated range of about 2,000 kilometres and a payload capacity of roughly 700 kilograms.
- It is **designed to carry both conventional explosive payloads and nuclear warheads.**

PETROGLYPHS



- Petroglyphs (also known as rock engravings) **are symbolic images sculpted or engraved on the surface of rocks by removing material from its surface layer with instruments of superior hardness.**
- The techniques used to create these images include pecking, incising, abrading, sculpting, polishing, drilling, and scratching.
- These processes remove part of the rock and therefore are different from images simply painted or drawn on rock, which are called **petrographs.**
- The word “petroglyph” is derived from two Greek words, “petros” meaning “stone,” and “glyphein” meaning “to carve.”
- Petroglyphs took two primary forms, as images **either appear as scratches or deeper visible indentations on rock.**
- Petroglyphs are typically associated with prehistoric populations and can be found on every continent throughout the world, except Antarctica.
- However, they are especially concentrated in Africa, South America, North America (mainly in the southwestern United States), Siberia, Australia, and Europe (Scandinavia, Spanish Galicia, Ireland and Italy).
- Example of Petroglyph Site in India: **Edakkal Caves in Wayanad, Kerala.**

Significance

- They are among the earliest forms of art to have existed and are therefore considered the foundation of art.
- Ancient peoples also used petroglyphs as a form of communication or writing.
- For example, some petroglyphs clearly indicated the borders between tribal lands, and others were astronomical markers and maps.
- Additionally, some petroglyphs served as musical instruments and were known as “rock gongs.”

ARBITRAGE FUNDS

- Arbitrage is the practice of **buying something** (for example, shares or foreign money) **in one place and selling it in another place where the price is higher**.
- Arbitrage funds are distinct in their investment approach and **aim to generate returns from the price disparities of the same asset** in different market segments, mainly the cash and futures markets.
- Arbitrage Funds invest in a mix of equity and debt.
- As per SEBI’s categorisation circular, **arbitrage funds shall have a minimum 65% in equity and equity-related instruments**.
- The fund manager buys equity shares of a company and shorts an equal quantity of the same security in futures segment.
- This is done in a manner to earn through the price difference in both the segments.
- In arbitrage funds, equities are only purchased when clear opportunities for returns are identified.
- In the absence of such opportunities, the fund invests in short-term money market instruments or debt securities, while keeping a minimum of 65% allocation equity and equity-related instruments.

PINK NATIONAL COMMON MOBILITY CARD

- The **Pink National Common Mobility Card (NCCM)**, or "Saheli Card" is a 2026 **Delhi government initiative** inaugurated by President Droupadi Murmu to provide **free, secure, and contactless bus travel for women**.
- It aligns with the "**One Nation, One Card**" vision, integrating with metro/bus services using Aadhaar-based authentication.

THAAD

- It is an acronym for **Terminal High Altitude Area Defense**, a transportable, ground-based anti-ballistic **missile defence system**.
- First proposed in 1987 and then finally deployed in 2008, the THAAD **cannot be used as a form of attack** against an enemy.
- It is designed to **intercept and destroy short and medium-range ballistic missiles** in their final flight phase.
- THAAD is coupled with **space-based and ground-based surveillance** stations, which transfer data about the incoming missile and inform the THAAD interceptor missile of the threat type classification.
- This system has been designed and manufactured by the USA company **Lockheed Martin**.
- It has been previously deployed in the United Arab Emirates (UAE), Guam, Israel, Romania as well.
- Presently, the US is planning on supplying such systems for the defence of Israel.



HEXAGON OF ALLIANCES



- Amidst intense geopolitical competition in the Middle East and the Horn of Africa, **Israel** has announced the "**Hexagon of Alliances**".
- It is a **proposed strategic framework** designed to **unite moderate powers across the Indo-Pacific, Eastern Mediterranean, Gulf, and Africa** that share similar views on security challenges.
- **Objective:** The framework envisions a six-sided network of like-minded nations to counter:
 - The **Axis of Resistance** led by Iran (including Hezbollah, Hamas, Houthis, and Iraqi militias)
 - The emerging radical Sunni axis (comprising **ISIS remnants and Muslim Brotherhood** (founded in Egypt in 1928)-affiliated groups).
- **Key Partners:** India has been positioned as a central pillar in the proposed "Hexagon of Alliances" framework, with Israel, Greece, and Cyprus identified as the other core members. Additional Arab, African, and Asian nations (e.g., Ethiopia, UAE) are expected to join.
- **Focus Areas:** The proposed alliance structure could focus on strategic cooperation in defence, intelligence sharing, technology, diplomacy and security coordination among participating countries.

- **Strategic Significance:** The alliance represents a natural evolution of existing groupings, including the Abraham Accords, India-Israel strategic ties, and the I2U2 (India-Israel-UAE-US) framework, potentially creating a continuous arc of moderate nations linking the Indo-Pacific to the Mediterranean.
- **Geopolitical Implications:** Supporters view it as a **strategic counterweight to radicalism**, while critics question its feasibility given diverse national interests.
- Regional players like Turkey and Pakistan perceive it as potentially anti-Turkey or anti-Muslim Ummah in orientation.
- The Pakistani Senate has unanimously passed a resolution condemning Israel's plan to ally with India and other countries.

SULPHUR DIOXIDE



- It is a **colorless gas** with a **pungent odor**.

Properties of Sulphur Dioxide:

- It is a liquid when under pressure, and it dissolves in water very easily.
- It has a **pungent, irritating odor**, familiar as the smell of a just-struck match.
- **Applications:** It is used to manufacture chemicals, in paper pulping, in metal and food processing.
- **Impacts of Sulphur Dioxide:** It is harmful for human health, environment and climate.

Occurrence of Sulphur Dioxide:

- Sulfur dioxide in the air comes mainly from activities such as the **burning of coal and oil at power plants** or from **copper smelting**.
- It is usually prepared industrially by the burning in air or oxygen of sulfur or such compounds of sulfur as iron pyrite or copper pyrite.
- In nature, sulfur dioxide can be released to the air from **volcanic eruptions**.
- The largest source of SO₂ in the atmosphere is the **burning of fossil fuels by power plants** and other industrial facilities.

CONTROLLER GENERAL OF ACCOUNTS

- The Controller General of Accounts is the **Principal Advisor on accounting matters to the Union Government**.
- **Legal Status:** It is **not a constitutional body**.
- The Allocation of Business Rules, 1961 mention the duties and responsibilities of the CGA.
- **Nodal Ministry:** It works under the **Department of Expenditure, Ministry of Finance**.

Functions:

- **Management Accounting System:** CGA establishes and manages a technically sound Management Accounting System.
- **Preparation of Accounts:** It prepares and submits the accounts of the Union Government and produces monthly and annual analysis of expenditures, revenues, borrowings, and fiscal indicators.
- **Exchequer Control and Internal Audit:** It is responsible for exchequer control and internal audits.

Comptroller and Auditor General (CAG)

- **Constitutional Status:** The CAG is a constitutional body established under **Article 148** of the Constitution of India.

- **Appointment:** The President appoints the CAG on the recommendation of the Prime Minister.
- **Audit Functions:** The CAG audits all receipts and expenditure of the Union and state governments, including bodies financed by the government.
- **Institutional Role:** The CAG heads the Indian Audit and Accounts Department, which is managed by officers of the Indian Audit and Accounts Service.
- The **Annual Appropriation Account (Civil)** and Union Finance Accounts are submitted to Parliament under Article 150 of the Constitution on the advice of the CAG.

PRECISION STRIKE MISSILE

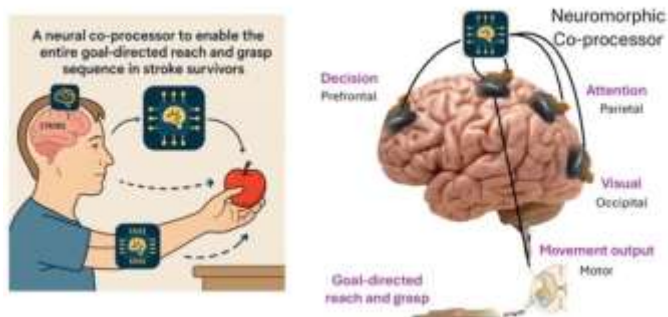


- It is a **surface-to-surface guided ballistic missile to strike targets at long distances** with high precision.
- It is being developed and manufactured primarily for the US Army by **Lockheed Martin** (a US aerospace and defence company).
- It entered US service in late 2023.
- It features an open systems architecture and a modular design.
- It is launched from existing artillery platforms, including the M142 High Mobility

Artillery Rocket System (HIMARS) and the M270A2 Multiple Launch Rocket System (MLRS).

- The missile uses **solid rocket propellant and advanced navigation systems**, including GPS and inertial guidance, to hit targets accurately over long distances, even in challenging weather conditions.
- It has a range of **at least 500 km**.
- It has a hypersonic-class ballistic trajectory that can even be integrated with satellites, drones and radar systems.
- It is equipped with an **Insensitive Munitions (IM)** energetic payload, designed to reduce the risk of accidental detonation.

MOONSHOT PROJECT



- The Moonshot Project is an **advanced research initiative that aims to develop brain co-processors to decode neural signals**, process them using artificial intelligence, and restore lost brain functions.
- **Launched by:** The project is launched by the **Indian Institute of Science (IISc)**.
- **Funded by:** The project is funded by the **Pratiksha Trust**, founded by Senapathy 'Kris' Gopalakrishnan and Sudha Gopalakrishnan.
- **Aim:** The project aims to develop implantable and non-invasive brain co-processors that decode neural activity from recordings, process it using artificial intelligence, and send signals back to the brain through neural stimulation or neurofeedback.

Key Features

- **Key focus:** The project focuses on restoring sensorimotor functions such as reaching and grasping in stroke survivors through brain co-processors.
- **Technology used:** The system combines neuromorphic hardware, artificial intelligence algorithms, neural recordings, and closed-loop stimulation to restore coordinated movement.
- **Dual approach:** The project develops both implantable devices and non-invasive brain co-processors to support neurological rehabilitation.
- **Digital public goods:** The initiative plans to develop India-specific stereo EEG and ECoG databases and create open-source AI tools, datasets, and visualization platforms.
- **Two-phase development:** Phase one develops and validates a non-invasive neural co-processor, while phase two aims to build a minimally invasive embedded implant.
- **Significance:** The project will build indigenous neurotechnology capacity in India and support stroke rehabilitation by restoring critical functions such as goal-directed reaching and grasping.


BRENT CRUDE

- Brent crude is the **world's leading international oil benchmark**.
- It is a **waterborne North Sea crude benchmark**, which means it can be shipped easily across global markets and therefore serves as a reference price for oil traded worldwide.
- ICE describes Brent as **"the world's crude benchmark."**
- The Brent benchmark **reflects North Sea crude streams**. Over time, the benchmark has evolved beyond the original Brent field and is based on a broader **basket of North Sea grades**, making it more representative and liquid for global pricing.

- Brent crude futures are traded mainly on the **Intercontinental Exchange (ICE)**.
- The ICE Brent crude futures contract is a major global derivatives contract used for hedging, trading, and price discovery in oil markets.
- Brent is the **key benchmark for pricing a large share of internationally traded crude oil**, especially oil moving to Europe, Africa, and Asia. The U.S. EIA notes that crude benchmarks like Brent play a central role in pricing oil globally.

Brent vs WTI:

- Brent and WTI are the two most cited oil benchmarks. Brent is a **seaborne global benchmark**, while **WTI (West Texas Intermediate)** is more closely linked to inland U.S. crude markets. Because Brent better reflects globally traded seaborne oil, it is usually more relevant for import-dependent countries like India.

 India imports more than 80% of its crude oil requirement, so Brent movements matter directly for the economy. A rise in Brent can increase fuel and fertiliser costs, widen the current account deficit, raise inflation, and affect fiscal calculations. Reuters noted that the latest Brent spike has already hurt Indian refinery stocks and raised concerns over India's energy costs.

HUMAN PAPILLOMAVIRUS (HPV)

- HPV is a group of **more than 200 related, non-enveloped, double-stranded DNA viruses** belonging to the Papillomaviridae family that primarily infect epithelial cells on the skin and mucous membranes.
- Most infections are **asymptomatic** and resolve spontaneously, with **approximately 90% clearing within one to two years** through the body's immune response.

- **Classification of HPV Types:** HPV types are classified into two main categories:
 - **Low-risk types** (e.g., HPV 6 and 11): These primarily cause benign conditions such as genital warts or common skin warts.
 - **High-risk types** (e.g., HPV 16 and 18): These are oncogenic and responsible for the majority of HPV-related cancers.
- **Disease Burden:** Cervical cancer is the **2nd most common cancer** among women in India, with nearly 80,000 new cases and over 42,000 deaths reported annually.
- Persistent HPV infection causes nearly 85% of all cervical cancers, with types 16 and 18 accounting for over 80% of cases in India.
- **Transmission:** Transmission occurs mainly through **intimate skin-to-skin contact**, most commonly during sexual activity (vaginal, anal, or oral).
- It is the most common sexually transmitted infection worldwide.
- **Prevention Strategy:** Vaccination is the best way to prevent HPV infection and related cancers.
- **Gardasil (and Gardasil 9)** is a highly effective, FDA-approved injection for males and females (ages 9–45) to prevent HPV-related diseases, including cervical, anal, and throat cancers, as well as genital warts.
- The primary target is all girls aged 9–14 years, before they become sexually active.
- The vaccine may be given as 1 or 2 doses. Additional prevention methods include condom use, voluntary male circumcision, and smoking cessation.
- **WHO Elimination Targets (WHA 73.2):** The Global strategy to accelerate the elimination of cervical cancer sets three key targets by 2030:
 - 90% of girls fully vaccinated with HPV vaccine by age 15.

- 70% of women screened with a high-performance test by age 35 and again by 45.
- 90% of women identified with cervical disease receive treatment and care.
- **WHO Response Framework:** Preventing HPV-related cancers is a key goal of the WHO's global health strategy for 2022–2030, which addresses HIV, hepatitis, and sexually transmitted infections. Additionally, a 2021 WHO resolution on oral health includes measures to combat mouth and throat cancers.

HIGH ENERGY PROTON ACCELERATOR SYSTEM

- India plans to establish a **high-energy proton accelerator facility in Visakhapatnam** as part of its **long-term nuclear research roadmap**.
- The project is being developed by the **Raja Ramanna Centre for Advanced Technology (RRCAT)** under the Department of Atomic Energy (DAE).
- A proton accelerator is a **type of particle accelerator that uses electromagnetic fields to accelerate protons to extremely high energies**.
- These high-energy protons **can then be directed onto a target to produce secondary particles** such as neutrons.

Key Principle: Spallation

- When high-energy protons strike a heavy metal target (e.g., tungsten or lead), they trigger a process called Spallation.
- In spallation, the target nucleus ejects several neutrons after being hit by energetic protons.
- These neutrons can then be used for nuclear fuel generation or scientific experiments.

Role in India's Nuclear Programme

- High-energy proton accelerators are important for **Accelerator-Driven Systems (ADS)**.

Accelerator-Driven System (ADS):

- A nuclear system where an external particle accelerator provides neutrons to sustain nuclear reactions.
- Particularly useful for utilizing thorium.
- India possesses one of the world's largest thorium reserves and follows a three-stage nuclear power programme proposed by Homi Jehangir Bhabha.
- ADS can help:
 - Convert thorium-232 into fissile uranium-233
 - Improve nuclear fuel efficiency
 - Reduce long-lived radioactive waste.

Applications:

High-energy proton accelerator systems have multiple uses:

1. Nuclear Energy
 - a. Thorium fuel cycle development
 - b. Accelerator-driven reactors
2. Scientific Research
 - a. Study of materials using neutron beams
 - b. Particle physics experiments
3. Medical Applications
 - a. Proton therapy for cancer treatment
 - b. Radioisotope production
4. Strategic and Industrial Uses
 - a. Defence research
 - b. Advanced materials testing

Significance of Visakhapatnam as a location for research:

- Strong technology and research ecosystem
- Proximity to the sea, enabling access to large volumes of cooling water
- Existing nuclear and scientific infrastructure.

Institutional Background

- The **Raja Ramanna Centre for Advanced Technology (RRCAT)**, established in 1984, is India's premier laboratory for accelerator and laser technologies, with applications in space, defence, communication, and medicine.

BASCULE BRIDGE



- It is a **type of bridge that can be raised to provide clearance for waterway traffic** and is also referred to as a **lifting bridge or a drawbridge**.
- It makes use of a counterweight to balance a span or leaf through its upward trajectory.
- The balance of the weight is sometimes adjusted according to the frequency of waterway traffic.
- The counterweight is usually heavier than the leaf itself, which makes lifting easier and reduces the energy needed to operate the bridge.
- The span can be single or double, and in rare cases it may even be triple or quadruple.
- A **pulley system helps raise and lower the bridge**.
- Cables or chains connected to the counterweight run through pulleys and are attached to the leaf.
- This mechanical system helps reduce the force needed to lift the leaf, using something called "mechanical advantage."

- The word 'bascule' is **French in origin** and translates loosely as a seesaw or a balancing mechanical device.
- It is thought that bascule bridges were first designed during the mediaeval era in Europe, when they served defensive purposes.
- The longest double-leaf bascule bridge in the world is the Broadway Bridge in Portland, Oregon, USA.

PASSIVE EUTHANASIA

- **Euthanasia** is the practice of ending the life of a patient to limit the patient's suffering.

Types of Euthanasia:

- **Active Euthanasia:**
 - Active euthanasia occurs when the medical professionals, or another person, deliberately does something that causes the patient to die, such as administering a lethal injection.
- **Passive Euthanasia:**
 - Passive euthanasia is the act of **withholding or withdrawing medical treatment**, such as withholding or withdrawing life support, with the intention of allowing a person to die.

Euthanasia in India:

- The Supreme Court of India in a landmark judgement in ***Common Cause vs Union of India (2018)*** recognised a person's **right to die with dignity**, saying that a terminally ill person can opt for passive euthanasia and execute a **living will** to refuse medical treatment.
- It also laid **down guidelines for 'living will'** made by terminally ill patients who beforehand know about their chances of slipping into a permanent vegetative state.
- Previously in 2011, the SC recognised passive euthanasia in the **Aruna Shanbaug case** for the first time.

Different Countries with Euthanasia:

- Netherlands, Luxembourg and Belgium allows both types of euthanasia and assisted suicide for anyone who faces “unbearable suffering” that has no chance of improvement.
- **Switzerland bans euthanasia but allows assisted dying** in the presence of a doctor or physician.
 - Since 1942, Switzerland has allowed assisted suicide, focusing on personal choice and control over the dying process.
 - The law requires individuals to be of sound mind and their decision must not be driven by selfish motives.
- **Australia** has also legalised both types of euthanasia, and applies to adults with full decision-making capacity who have a terminal illness with a prognosis of death within six or twelve months.
- The **Netherlands** has a well-established legal framework for euthanasia, regulated by the “Termination of Life on Request and Assisted Suicide (Review Procedures) Act” of 2001.



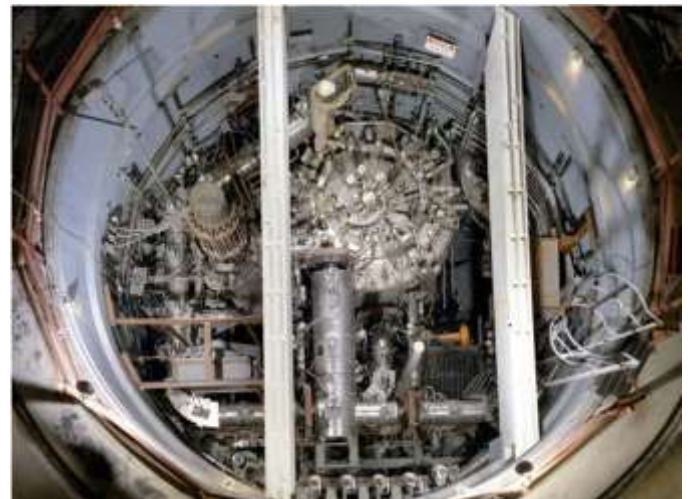
Modifications in SC Guidelines:

- The Supreme Court in 2023 modified the 2018 Euthanasia Guidelines to ease the process of granting passive euthanasia to terminally ill patients.
- **Attestation of Living Will:** The Court removed the requirement for a judicial magistrate's attestation on a living will. Now,

attestation by a notary or a gazetted officer suffices.

- **Integration with National Health Digital Record:** Previously, living wills were held by the district court. The revised guidelines mandate that these documents be part of the National Health Digital Record.
- **Appeal Process for Denial of Euthanasia:** If a hospital’s medical board denies permission to withdraw life support, the patient's family can appeal to the relevant High Court.
- The Court will then form a new medical board to reassess the case, ensuring a thorough and just review.

HALEU THORIUM FUEL



- HALEU refers to **High-Assay Low-Enriched Uranium**.
- It is uranium enriched to **5–20%** Uranium-235, higher than conventional reactor fuel (<5%) but **below weapons-grade level**.
- Designed for advanced reactors, including Small Modular Reactors (SMRs), fast reactors and micro-reactors.

Advantages:

- Higher energy density → longer fuel cycles.
- Reduced frequency of refuelling.
- Improved reactor efficiency and compact design.
- Lower waste generation per unit of energy.

Thorium Fuel Cycle

- Thorium-232 itself is **not fissile but fertile**.
- It **absorbs neutrons to form Uranium-233**, which is a fissile material.
- Thorium is three to four times more abundant than uranium globally.
- India possesses large thorium reserves, especially in monazite sands of Kerala, Tamil Nadu and Odisha.

HALEU-Thorium Combination

- HALEU can act as a starter fuel in reactors using a thorium cycle.
- The enriched uranium provides initial neutrons that convert Th-232 → U-233, sustaining the reaction.
- This combination is being studied for advanced reactors and breeder systems.

Advantages:

- Greater fuel efficiency: More energy from available resources.
- Lower long-lived radioactive waste compared to traditional uranium cycles.
- Improved proliferation resistance due to the presence of U-232 contamination in U-233.
- Supports India's long-term thorium programme.

Relevance for India

- India's three-stage nuclear programme ultimately aims to utilise thorium reserves.
- Stage-3 reactors such as the Advanced Heavy Water Reactor (AHWR) are designed to use thorium-based fuels.
- Advanced fuels like HALEU may help accelerate development of next-generation reactors and SMRs.

TRANSCATHETER AORTIC VALVE REPLACEMENT (TAVR)

- Transcatheter Aortic Valve Replacement (TAVR), also known as TAVI (Implantation), is a **minimally invasive surgical procedure** to **replace a thickened aortic valve** that can't open properly.

- It primarily treats **Aortic Stenosis**, where the heart's aortic valve narrows, restricting blood flow from the left ventricle to the rest of the body.
 - Unlike traditional open-heart surgery, TAVR uses a catheter (thin flexible tube).
- A replacement valve (often made of biological tissue from a cow or pig) is wedged into the old valve's place.
- A Karnataka-based medtech firm recently announced the launch of India's first indigenous Balloon-Expandable TAVR system for preclinical studies.
- Indigenous production aims to reduce the cost of TAVR Valves significantly.
- Reducing dependence on imports helps make advanced cardiac care accessible.

LITHIUM ION BATTERY

- A lithium-ion battery is a type of **rechargeable battery** that uses lithium ions as the primary component in its electrochemical system.
- It is widely used in **portable electronic devices, electric vehicles, and various energy storage applications**.

Basic structure of a lithium-ion battery:

- A battery is made up of an **anode (a negative electrode)**, **cathode** (a positive electrode), **separator**, **electrolyte**, and two **current collectors** (positive and negative).
- The electrodes are typically made of materials that can intercalate lithium ions during charging and discharging cycles.
- Common cathode materials include **lithium cobalt oxide (LiCoO₂)**, **lithium manganese oxide (LiMn₂O₄)**, and **lithium iron phosphate (LiFePO₄)**.
- **Graphite** is commonly used as the **anode material**.

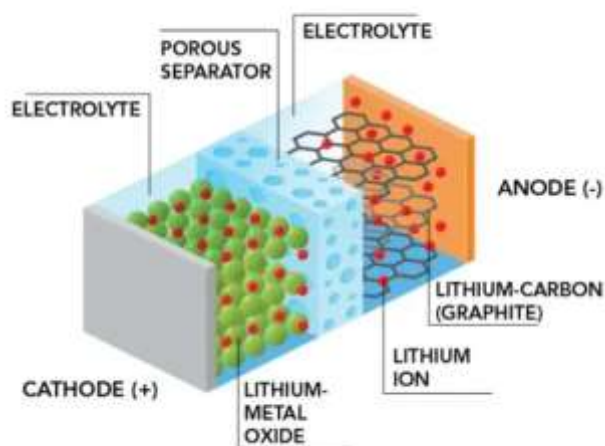
Functioning:

- During a discharge cycle, lithium atoms in the anode are ionized and separated from their electrons.
- The lithium ions move from the anode and pass through the electrolyte until they reach the cathode, where they recombine with their electrons and electrically neutralize.
- The lithium ions are small enough to be able to move through a **micro-permeable separator** between the anode and cathode.
- In part because of lithium's small size (third only to hydrogen and helium), Li-ion batteries are capable of having a **very high voltage and charge storage per unit mass and unit volume**.

Applications:

- Portable electronic devices (such as smartphones and laptops).
- Used to power electrical systems for some **aerospace applications**, notable in the new and more environmentally friendly **Boeing 787**, where weight is a significant cost factor.
- Battery-powered cars and electric vehicles

PARTS OF A LITHIUM-ION BATTERY



Advantages of Li-ion batteries:

- One of the highest **energy densities** of any battery technology today.
 - This means they can store a significant amount of energy for their size and weight.

- A relatively **low self-discharge rate**
- Li-ion battery cells can deliver up to 3.6 Volts, 3 times higher than other technologies.
- **No memory effect**, a detrimental process where repeated partial discharge/charge cycles can cause a battery to 'remember' a lower capacity.
- These batteries do not contain toxic cadmium, which makes them easier to dispose of than Ni-Cd batteries.

Disadvantages:

- Tendency to overheat, and can be damaged at high voltages.
 - In some cases, this can lead to thermal runaway and combustion.
- Li-ion batteries require safety mechanisms to limit voltage and internal pressures, which can increase weight and limit performance in some cases.
- **Ageing**, meaning that they can lose capacity and frequently fail after a number of years.
- **Cost**, which is around 40% higher than Ni-Cd.

SEMAGLUTIDE



- It belongs to a class of medications known as **glucagon-like peptide-1 receptor agonists**, or GLP-1 RAs.
- It mimics the GLP-1 hormone, released in the gut in response to eating.
- One role of GLP-1 is to **prompt the body to produce more insulin**, which reduces blood sugar (glucose).

- For that reason, semaglutide is **used for the following**:
 - to **control blood sugar levels** in certain patients with type 2 diabetes (a condition in which blood sugar is too high because the body does not make or use insulin normally).
 - to **reduce the risk of a heart attack, stroke, or death** in adults with **type 2 diabetes** and heart and blood vessel disease.
 - to reduce the risk of a heart attack, stroke, or death in adults who are **obese or overweight** and have heart and blood vessel disease.
 - to reduce the risk of worsening of kidney disease and death in certain adults with type 2 diabetes and kidney disease
 - to assist with weight loss in certain people who are obese or overweight and have weight-related medical problems.

NEODYMIUM-IRON-BORON MAGNET



- The NdFeB magnet is the **strongest permanent magnet** in the world.
- It is a **tetragonal crystal** formed of **neodymium, iron, and boron**.
- It is made mainly from a combination of Neodymium, Iron, Boron, Cobalt and varying levels of Dysprosium and Praseodymium.

- Neodymium Magnets can be divided into **three types**:
 - **Sintered NdFeB magnets**: It has the largest output and the most widely used in the NdFeB family.
 - **Bonded NdFeB magnets**: This has the advantages of low cost, high dimensional accuracy, a large degree of freedom of shape, good mechanical strength, light specific gravity, etc., and has been widely used in the market.
 - **Hot-pressed NdFeB magnets**: They can achieve magnetic properties similar to sintered NdFeB without adding heavy rare earth elements.
- They have the advantages of **high density**, and **high coercivity**, but the mechanical properties are not good, **high orientation**, **good corrosion resistance**.
- Due to different production processes, they have big differences in product magnetic properties, post-processing, and applications.
- **Applications**: It is widely used in **electronic products**, such as **hard drives, mobile phones, earphones, and battery-powered tools**.

SENSEX

- Sensex is the benchmark index of the **Bombay Stock Exchange**.
- It was launched on January 1, **1986**, as a **basket of 30 stocks** representing the country's **largest, financially-sound companies listed on the BSE**.
- The term 'Sensex' is a blend of words 'Sensitive' and 'Index' and was coined by stock market expert Deepak Mohini.
- The Sensex reflects the movements in the Indian stock market.
- It is considered the benchmark index of the Indian stock market.

How is the Sensex calculated?

- It was calculated based on the market capitalisation, or **"Full Market Capitalisation"**, when it was launched but shifted to a **"Free-float Market Capitalisation"** methodology from September 1, 2003.
- Free-float is the proportion of total shares issued by the company that is readily available for trading to the general public.
- It does not take into account promoters' holdings, government holdings, and other shares that will not be available in the market for trading in the ordinary course of events.

NIFTY

- NIFTY is a market index introduced by the **National Stock Exchange (NSE)**.
- It is a blended word – National Stock Exchange and Fifty coined by NSE.
- Nifty was **established in 1996** under the name CNX Nifty. Further, in 2015, it was renamed Nifty 50.
- NIFTY 50 is a **benchmark-based index** and the flagship of NSE.
- It represents the **performance of the 50 largest and most actively traded stocks listed on the NSE**.
- These 50 largest companies are from different industrial sectors and collectively represent the Stock Market and Economic Trends of India.

COBALT



- It is a **hard, lustrous, silver-grey metal**.

- It is a **ferromagnetic strategic alloying metal**.
- It is a chemical element with the symbol Co and atomic number 27.
- It is associated mostly with **copper, nickel and arsenic ores**.
- Cobalt is extracted as a **by-product of copper, nickel, zinc or precious metals**.
- **Major World reserves** of cobalt: **Democratic Republic of Congo**, Russia, Canada, Philippines and Cuba.
- **Occurrences of cobalt in India:** Jharkhand, Odisha, Rajasthan, Nagaland and Madhya Pradesh.
- Major use of cobalt is in **metallurgical applications**, in the **Special alloy/Superalloy Industry**, in **magnets and cutting tools industries**.
- Cobalt is used as **precursors (cobalt compounds)** for **cathodes in rechargeable batteries**.
- It is also used in **powerful magnets**, cutting tools and high-strength alloys in the aerospace, energy and defence sectors.
- Cobalt compounds have been used since antiquity as a **pigment (cobalt-blue)** for **pottery, glass, paints** and other media.

KURUMBA PAINTING



- It is a **prehistoric art form**, estimated to be over 3000 years old.
- It originates from the **Kurumba tribe** in **Tamil Nadu, Kerala, and Karnataka**.

- The art was **traditionally drawn on rocks and in caves** across the high hills of the Nilgiris.

Raw Materials and Tools Used:

- Kurumba paintings use **natural pigments sourced from the forest**.
- Yellow-brown and black pigments come from **Vengai tree resin**, while green pigments are derived from crushed leaves.
- Artists use **fine twigs, bamboo sticks, and natural fiber brushes** for application.
- The paintings are **traditionally done on walls, fabric, and handmade paper**.

Design and Color:

- Kurumba tribal paintings use natural colors—**green from leaves, red and white from soil, and black from tree bark**—applied with cloth on cow dung-coated walls.
- The art features **simple, linear motifs** with dots, lines, and geometric shapes, depicting huts, animals, and community life.
- Themes center around spiritual beliefs, rituals, festivals, and daily activities.
- This minimalist yet expressive style preserves the tribe's cultural heritage and reflects their deep spiritual bond with nature.
- **Product Range:** Wall murals, decorative panels, ritual paintings, cloth artworks.

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



- The IPCC is the United Nations body for assessing the science related to climate change.
- It was established by the **World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP)** in 1988.
- **Membership:** The IPCC is an organization of governments that are **members of the United Nations or the World Meteorological Organization (WMO)**.
- The IPCC currently has **195 members**.
 - India is a member.
- **Objective:** To assess scientific, technical, and socio-economic information relevant to the understanding of human-induced climate change, potential impacts of climate change, and options for mitigation and adaptation.
- The IPCC provides governments with scientific information for use in developing climate policies.
- The main activity of the IPCC is the **preparation of reports assessing the state of knowledge of climate change**.
- These include **assessment reports, special reports and methodology reports**.
- IPCC reports are also key inputs into international climate change negotiations under the United Nations Framework Convention on Climate Change (UNFCCC).
- The IPCC **does not undertake new research or monitor climate-related data**.
- Instead, it conducts assessments of the state of climate change knowledge on the basis of published and peer-reviewed scientific and technical literature.
- **Scientists volunteer their time to assess the thousands of scientific papers published each year** to provide a comprehensive summary of what is known about the drivers of climate change, impacts and future risks, and how adaptation and mitigation can reduce those risks.

- The IPCC's **first assessment report was released in 1990.**
- The IPCC finished its Sixth Assessment Report cycle in 2023 and has now entered its **Seventh Assessment Report cycle.**
- The IPCC has been awarded the Nobel prize for peace in 2007.

HELIUM

- India's semiconductor and printed circuit board (PCB) industry is bracing for potential disruption in helium supplies after Iran's attack on Qatar's Ras Laffan LNG hub.
- **Helium** is an inert gas and does not react with other substances or combust.
- It was discovered in 1868 by Jules Janssen and Norman Lockyer via a **yellow spectral line during a solar eclipse.**
- Named after the Greek word 'Helios', meaning Sun.
- **Properties of Helium**
 - Its **atomic number** is 2, making it the **second lightest element after hydrogen.**
 - Helium also has a **very low boiling point** (-268.9° C), allowing it to remain a gas even in super-cold environments.
 - The **gas is non-toxic**, but cannot be breathed on its own, because it displaces the oxygen humans need for respiration.
 - It is the **only element that cannot be solidified by sufficient cooling at normal atmospheric pressure.**
- **Largest global reserves:** United States, Algeria, and Russia.
- India's **Rajmahal Volcanic Basin** (Jharkhand) is a significant helium reservoir trapped for billions of years.
- **Applications of Helium**

- **Pressurizing Fuel Tank:** It is used to pressurize fuel tanks, ensuring fuel flows to the rocket's engines without interruption.

Cooling systems: It is used in cooling systems of rockets.

GLOBE NETWORK

- The **Global Operational Network of Anti-Corruption Law Enforcement Authorities** (GlobE Network) is an international platform that connects anti-corruption law enforcement agencies across countries to strengthen cooperation in tackling corruption.
- Established under the **Riyadh Initiative** during **Saudi Arabia's G20 Presidency.**
- Operates under the framework of the UN Convention against Corruption (**UNCAC**).
- **Core Purpose**
 - Facilitates **direct cooperation** between anti-corruption agencies.
- **Focuses on:**
 - Investigation of corruption cases
 - Prosecution of offenders
 - Recovery of illicit assets (proceeds of crime)
- **How It Functions?**
 - Enables **practitioner-level collaboration** (not just diplomatic channels).
 - Provides tools like secure communication platforms for real-time information sharing
 - Intelligence exchange between member agencies
- **Importance in Today's Context**
 - Addresses **transnational and tech-enabled corruption.**
 - Helps countries overcome jurisdictional barriers, delays in mutual legal assistance

- Strengthens **global asset recovery efforts**, a key goal under UNCAC.

AKASHA300 3D PRINTER

- It is a high-temperature multi-material extrusion 3D printer.
- It is backed by the Space Technology Innovation and Incubation Centre at IIST and the Kerala Startup Mission.
- **Features of Akasha300 3D Printer**
 - The printer features **dual-extrusion technology** capable of operating at temperatures up to 350°C, with future upgrades planned to extend this to 500°C.
 - Its modular extruder design allows integration of additional extrusion systems, paving the way for hybrid additive manufacturing techniques.
- The Akasha300 includes a heated bed that can reach up to 110°C, upgradeable to 150°C, and an enclosed chamber capable of maintaining temperatures up to 80°C.
- This enables **stable and precise printing of high-performance materials that require strict thermal conditions**.
- It is designed as an **industrial-grade research platform**, the system incorporates a robust motion system and integrated air filtration.
- **Significance:** These features make it suitable for research and development, allowing engineers and scientists to create functional components and prototypes with greater speed and accuracy.

PRISM-SG PORTAL

- PRISM-SG (**Portal for Rail-Road Inspection & Stages Management - Steel Girders**) Portal aimed at enhancing efficiency, transparency, and inter-agency

coordination in infrastructure development.

- **Features**
 - It has been developed to digitise key approval and inspection processes related to the construction of
 - **Road Over Bridges (ROBs)** and also includes **Quality Assurance Plan (QAP), Welding Procedure Specification Sheet (WPSS)** and fabrication stage inspection of steel girders.
- The portal enables **end-to-end online submission of documents**, scrutiny, raising and resolution of queries, approvals, scheduling of inspections, and uploading of inspection reports, photographs, test results, supported by a complete audit trail and real-time monitoring capabilities.
- It addresses challenges by providing an **integrated digital platform** that brings together **all key stakeholders, including Road Owning Departments, Indian Railways, contractors, fabricators, and inspection agencies**.
- **Significance**
 - It will help to reduce the approval and inspection timeline from approximately 12 months to about 3 to 4 months.
 - It will play a critical role in ensuring timely completion of RoBs and Railway Bridges, strengthening infrastructure delivery and enhancing connectivity across the country.

GRAMEEN CREDIT SCORE

Scoring Well!

Govt wants banks to use GCS as mandatory score

More parameters to be added

Avg monthly income of rural households: Up by 56% to

₹12,698 in 2021-22

₹8,059 in 2016-17

Credit Access: 75% of agri households availed loans from institutional sources in 2021-22, was 60.50% in 2016-17

GCS may include utility bill payments & govt beneficiary details

- The government has mandated banks to adopt the Grameen Credit Score (GCS) as the default assessment tool for rural borrowers to enhance financial inclusion with a major focus on first-time borrowers who lack a traditional credit history.
- It is **developed by public sector banks** to assess the creditworthiness of rural individuals, facilitating easier access to loans.
- Unlike traditional credit scores (like CIBIL) that rely heavily on bank loans and credit card repayment history, this **model looks at social and behavioural data** (social collateral like trust and pressure from a peer group) **within a community or microfinance framework**.
- It aims to **improve repayment discipline and reduce fraud** by providing a more accurate evaluation of borrowers in rural areas.
- It will strengthen **microfinance**, boost **financial inclusion**, and support sectors like **agriculture, rural development, and MSMEs**.
- GCS will **complement existing microfinance models** and work alongside credit scores like CIBIL and CRIF Highmark for assessing loans.
- This score will be **integrated with the SVAMITVA Scheme**.
 - The SVAMITVA Scheme (Survey of Villages and Mapping with Improved Technology in Village

Areas) is an initiative by the union govt. to provide rural property owners with legal ownership rights by mapping land parcels using drones and issuing property cards.

GRUH SUGAM PORTAL

NHB LAUNCHES
GRUH SUGAM PORTAL
Simplifying Home Loan Applications
for Servicemen and Govt. Employees

Unified Digital Platform

Accessible Across India

Easy Application Process

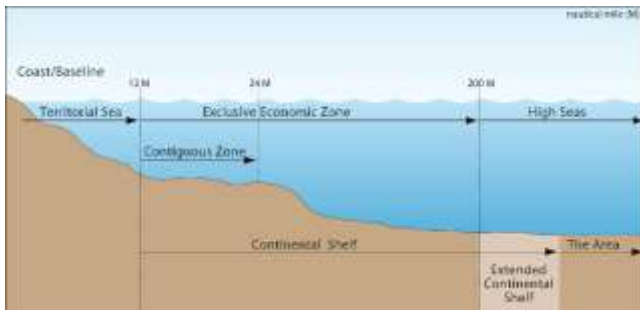
- It is a digital initiative to streamline the home loan process for **Defence and Government personnel**.
- It was launched by the **National Housing Bank (NHB)**.
- It promotes **digital lending adoption** and strengthens **financial inclusion** by improving access to housing loans.
- **Features of the portal:**
 - **Who can apply:** Defence Personnel, Members of Paramilitary Forces, Government Employees (State and Central) can apply for housing loans digitally through their respective administrative units.
 - It gives access to **Unified Digital Marketplace** that improves transparency and helps applicants discover the most suitable loan offers.
 - It provides seamless **digital integration** between NHB and lending institutions to ensure smoother operations.
 - It improves loan processing efficiency through a structured digital system.

- It includes a **grievance redressal mechanism and consumer protection support**. It offers an online chat facility for quick resolution of queries.



National Housing Bank (NHB) is the apex agency to promote cost effective housing finance system in India. It was set up by an Act of Parliament in 1987 and operates under the Ministry of Finance.

EXTENDED CONTINENTAL SHELF (ECS)



- **India expanded its claim in the Central Arabian Sea by 10,000 km² as part of its 'extended continental shelf,'** modifying an earlier claim to resolve a dispute with Pakistan.
- ECS refers to the **area beyond 200 nautical miles that countries can claim** by submitting geological and geophysical evidence to the **UN Commission on the Limits of the Continental Shelf (CLCS)**.
- These claims allow countries to explore resources like oil, gas, and minerals on and beneath the seabed.
- Coastal states have rights to an Exclusive Economic Zone (EEZ) up to 200 nautical miles from their coastline. However, such States can claim additional seabed area beyond this limit if they **prove scientifically that the continental shelf extends naturally from their landmass**.



The Commission on the Limits of the Continental Shelf (CLCS) is a body under the UNCLOS (UN Convention on the Law of the Sea) that helps states determine the outer limits of their continental shelf beyond 200 nautical miles. It reviews data provided by states and makes binding recommendations on the extent of the outer shelf limits. The commission comprises 21 experts from geology, geophysics, and hydrography.

MICROGRAVITY

- It is a condition of **apparent weightlessness** experienced in space when objects are in free-fall orbit around Earth. Microgravity **does not mean the absence of gravity**.
- At orbital altitudes (~250 miles above Earth), gravity is ~89% as strong as on Earth.
- Objects appear to float because they are in continuous free fall around the Earth, a state first explained by **Isaac Newton's orbiting cannonball thought experiment**.
- **Weightlessness ≠ no gravity**; rather, it results from free-fall motion, where objects, spacecraft, and astronauts all fall simultaneously.
- In such an environment, physiological changes occur, affecting bones, muscles, blood circulation, metabolism, and thermoregulation.
- **Thermoregulation** is crucial during long-duration space travel, where microgravity environment significantly alters normal physiological responses.

FALCON 9 ROCKET



- The SpaceX Falcon 9 is a **partially reusable two-stage rocket** that can propel **both satellites and astronauts** into a variety of orbits.
- It can lift up to:
 - **22,800 kg** to Low Earth Orbit (an altitude of 2000 km or less).
 - **8,300 kg** to Geostationary Transfer Orbit (GTO).
- Designed and manufactured by **SpaceX**

Key Features:

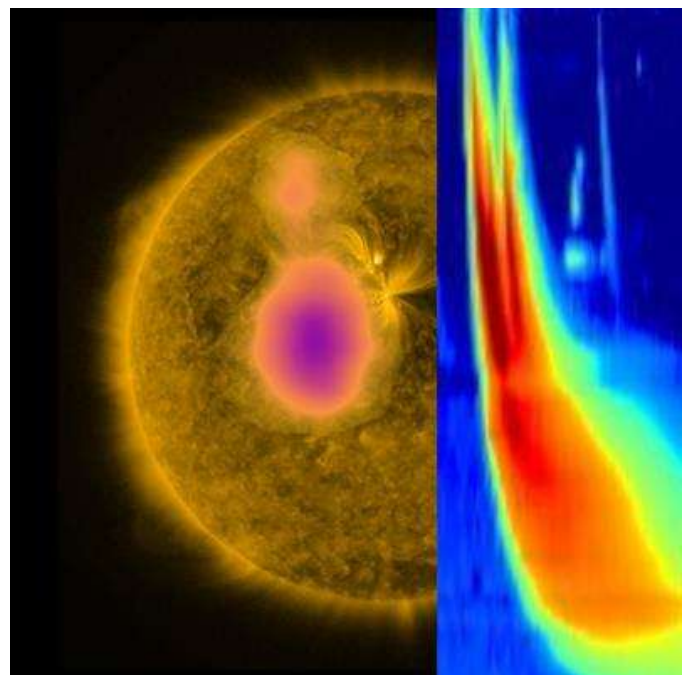
- **The rocket has two stages.**
 - The **first stage or booster stage** comprises nine Merlin engines (a family of rocket engines developed by SpaceX) which use **RP-1 (rocket-grade kerosene)** and **liquid oxygen (LOX)** as propellants.
 - The **second stage** consists of a single Merlin engine.
- **Reusability:** The **first stage** of the rocket is reusable. It is capable of re-entering the Earth's atmosphere and landing vertically on Earth after separating from the second stage. This significantly **reduces the cost of access to space**.

Notable Missions of Falcon 9:

- **Starlink:** Falcon 9 is the workhorse for deploying SpaceX's Starlink satellites, aimed at providing global internet coverage.

- **CRS Missions:** Falcon 9 has been used extensively for NASA's Commercial Resupply Services (CRS) missions to the International Space Station (ISS).
- **Crew Dragon:** It launched the **first commercial spacecraft (Crew Dragon/Dragon 2)** capable of carrying astronauts to the ISS and LEO. The **Polaris Dawn mission** is the planned private human spaceflight mission scheduled to be launched in July 2024, using the Falcon 9 rocket.
- **Crew Dragon** is a spacecraft developed and manufactured by SpaceX as part of NASA's Commercial Crew Program.
- It can **carry up to seven astronauts**. For NASA missions, it typically carries four astronauts and some cargo.

SOLAR RADIO BURST



- It is defined as **an intense solar radio emission associated with solar flares**.
- **Origin:** These are observed in radio wavelengths most frequently during solar transients, such as coronal mass ejections (CMEs) and flares.
- SRBs are direct signatures of accelerated electrons in the solar atmosphere.

- These are observed across a wide range of wavelengths, from millimetres to kilometres, corresponding to frequencies from the GHz to the kHz range.
- Observations at **short wavelengths correspond to distances close to the solar surface, while those at long wavelengths correspond to the large distances from the Sun.**
- **Types:** Considering the morphological characteristics, five main categories of solar radio bursts can be distinguished: Type I, Type II, Type III, Type IV, and Type V.

Impacts

- These solar transients have a **direct impact on the near-Earth atmosphere.**
- **It can interfere with Global Navigation Satellite System (GNSS) signals** by reducing signal-to-noise ratio and causing loss of lock.

NATIONAL COMPANY LAW APPELLATE TRIBUNAL

- It is a **quasi-judicial body constituted under the Companies Act, 2013.**
- It was established to hear appeals against the decisions of the National Company Law Tribunal (NCLT).
- **Objectives:** To promote timely corporate dispute resolution, ensure transparency, and improve efficiency in insolvency and corporate governance matters.

Functions of NCLAT

- Hearing appeals against orders of the **Insolvency and Bankruptcy Board of India (IBBI).**
- Hearing appeals against orders of the **Competition Commission of India (CCI).**
- Hearing appeals related to the **National Financial Reporting Authority (NFRA).**

- Giving advisory opinions when legal issues are referred by the President of India
- **Headquarters:** New Delhi.
- **Composition:** It includes a chairperson, along with Judicial and Technical Members, all appointed by the Central Government based on expertise in law, finance, accountancy, and administration.

Powers and Procedure

- **NCLAT can regulate its own procedure and possess powers equivalent to a civil court** under the Civil Procedure Code, 1908.
- It can summon witnesses, receive affidavits, enforce production of documents, and issue commissions.
- Orders passed by NCLAT are enforceable like civil court decrees.
- Appeals against NCLAT orders can be filed in the **Supreme Court of India.**
- Civil courts have no jurisdiction over matters within the purview of NCLAT.
- No court or authority can grant injunctions against any action taken by NCLAT under its legal authority.
- **Timely disposal:** NCLAT is required to dispose of appeals within **six months** from the date of receipt to ensure swift resolution.