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Current Affairs (CONSOLIDATION)

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Polity and Governance

Highlights

- Madras HC: Meritover Caste in Temple Priest Appointments
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- ART Regulations: Impact on Cost and Conception Opportunities
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- Central Bureau of Investigation
- Ceiling on Stocks of Wheat and Pulses

Madras HC: Meritover Caste in Temple Priest Appointments

Why in News?

The Madras High Court has recently made a significant ruling that highlights the **importance of meritocracy and equality** in the **appointment of temple priests**.

- The court's decision comes in response to a **writ petition** filed in 2018, challenging a job announcement for the post of **Archagar/Sthanigar (temple priest)** in **Sri Sugavaneswarar Swamy Temple, Salem (TN)**.
- The petitioner argued for appointments based on **traditional guidelines mentioned in the temple's Agama scriptures** and the **hereditary rights of long-serving priests**.
 - The **court ruled in favor of merit-based appointments**, rejecting the petitioner's claim.

What are the Legal and Historical Aspects of Temple Priest Appointments?

- **Legal Aspects:**
 - **Article 15** prohibits discrimination on the grounds of religion, race, caste, sex, or place of birth.
 - It states that the State shall not discriminate against any citizen on these grounds in **matters of employment or access to public places**.

- **Also, states have the authority to regulate religious institutions** and their affairs, including the appointment of temple priests. State legislation may prescribe **qualifications, procedures, and eligibility criteria** for such appointments.

➤ Historical Aspects:

- In many Hindu temples, the tradition of **hereditary appointments** has prevailed, where temple priesthood is passed down within specific families or castes.
 - Temples often follow **Agama scriptures that provide guidelines for temple rituals and practices**.
 - This practice is often based on the **belief in ancestral knowledge and purity of lineage**.
- However, in some regions **open competitions or selection based on qualifications** are also prevalent.

What are the SC Judgements regarding Temple Priest Appointments?

- **Seshammal & others vs. State of Tamil Nadu (1972):**
 - The SC held that the appointment of an Archaka (temple priest) is a **secular function**, and the **performance of religious service by the priests is an integral part of the religion**.
 - The court **differentiated between the secular and religious aspects** and stated that the

Note:



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prescription provided by the Agamas (scriptures) is significant only for the performance of the religious service.

- **Any individual, regardless of caste or creed, can be appointed as an Archaka** if they are well-versed and qualified in the Agamas and the rituals required for temple worship.
- Based on this decision of the SC, the Madras HC in this case has held that **ancestry based on caste will have no role to play in the appointment of Archaka** if the person so selected otherwise satisfies the requirements.
- **N. Adithayan vs. Travancore Devaswom Board (2002):**
 - The SC rejected the customary claim that **only Brahmins (in this case Malayala Brahmins)** can perform rituals in temples.
 - The court ruled that **trained individuals qualified to perform the puja in an appropriate manner** can carry out the rituals.
 - The SC emphasised that the restriction of **only Brahmins performing rituals** in certain temples was due to historical reasons, such as limited access to Vedic literature and sacred initiation.

What is Agama Shastra?

- **Agama Shastra** is a manual for worship, rituals and construction of temples in Hinduism. In Sanskrit, **agama means "handed down by tradition"** and shastra refers to a commentary or treatise.
- Agamas expound a variety of subjects and could be called the guides to a huge range of Hindu practices. They contain:
 - Manuals for deity worship, religious ceremonies, festivals etc.
 - Methods for salvation, Yoga
 - Devata, Yantra
 - Prayogas using various mantras
 - Temple Building, Town planning
 - Iconometry
 - Domestic practices and civil codes
 - Social/Public festivals
 - Holy Places
 - Principles of Universe, Creation and Dissolution
 - Spiritual Philosophy
 - Worlds
 - Austerities

- **Agama Principles** emphasize the importance of **following precise rituals and procedures to maintain the sanctity** and spiritual efficacy of the temple.
 - The Agama texts are considered authoritative and hold significance in the **appointment and training of temple priests**.

Critical Minerals for India

Why in News?

The **Ministry of Mines, Government of India** recently unveiled the first-ever report on **"Critical Minerals for India"** prepared by an expert team constituted by the Ministry of Mines.

- The report **identifies and prioritizes minerals essential for various industrial sectors**, aligning with India's vision of achieving a **robust and resilient mineral sector** in line with the larger goal of attaining **'Net Zero' emissions**.

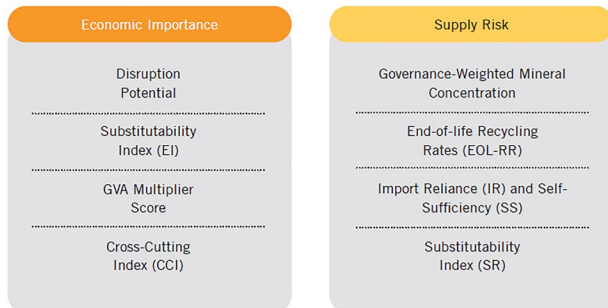
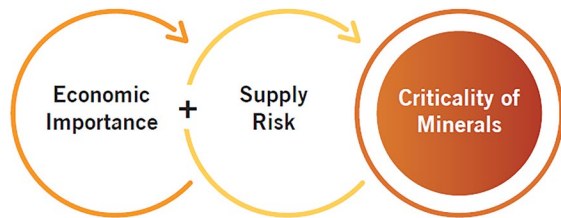
What are Critical Minerals?

- **Minerals:**
 - **Minerals are natural substances** that are formed by geological processes. They have a **definite chemical composition and physical properties**.
 - They are classified into **metallic and non-metallic minerals** based on their characteristics and uses.
 - Metallic minerals are those that contain metals or metal compounds, such as **iron, copper, gold, silver, etc.**
 - Non-metallic minerals are those that do not contain metals, such as **limestone, coal, mica, gypsum, etc.**
- **Critical Minerals:**
 - Critical minerals are those **minerals that are essential for economic development and national security**, the **lack of availability of these minerals or concentration of extraction or processing in a few geographical locations may lead to supply chain vulnerabilities** and even disruption of supplies.

Declaration of Critical Minerals:

- It is a dynamic process, and it can evolve over time as **new technologies, market dynamics, and geopolitical considerations emerge**.
- Different countries may have their own unique lists of critical minerals based on their specific circumstances and priorities.

Note:



- The **US** has declared **50 minerals** critical in light of their role in national security or economic development.
- **Japan** has identified a set of **31 minerals as critical for their economy**.
- The **UK considers 18 minerals critical, EU (34) and Canada (31)**.
- **Critical Minerals for India:**
 - **Expert Committee** under Ministry of Mines has identified a set of **30 critical minerals for India**.
 - These are Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.
 - **Creation of Centre of Excellence for Critical Minerals (CECM)** in the Ministry of Mines is also recommended by the Committee.
 - CECM will **periodically update the list of critical minerals for India** and notify the critical mineral strategy from time to time.

What is the Significance of Critical Minerals for India?

- **Economic Development:** Industries such as **high-tech electronics, telecommunications, transport, and defense** heavily rely on these minerals.
 - Additionally, **critical minerals are essential for**

green technologies like solar panels, wind turbines, batteries, and electric vehicles.

- Given India's significant domestic demand and potential in these sectors, their growth can lead to job creation, income generation, and innovation.
- **National Security:** These minerals are vital for **defense, aerospace, nuclear, and space applications**, necessitating the use of high-quality and reliable materials capable of withstanding extreme conditions and performing complex functions.
 - To ensure defense preparedness and self-reliance, **India must secure a steady supply of critical minerals.**
- **Environmental Sustainability:** They are **integral to the transition toward clean energy and a low-carbon economy**, enabling the reduction of India's reliance on fossil fuels and greenhouse gas emissions.
 - With a commitment to **attaining 450 GW of renewable energy capacity by 2030**, these minerals are essential for achieving India's green objectives.
 - **International Cooperation:** These collaborations enable India to diversify its import sources, reduce dependency on China, and enhance mineral security and resilience.

What are the Challenges for India Related to Critical Minerals?

- **Implications of the Russia-Ukraine Conflict:** Russia is a **significant producer of various critical minerals, while Ukraine possesses reserves of lithium, cobalt, graphite, and rare earth elements**.
 - The ongoing war between the two countries affects these critical mineral supply chains.

Sl. No.	Critical Mineral	Percentage (2020)	Major Import Sources (2020)
1.	Lithium	100%	Chile, Russia, China, Ireland, Belgium
2.	Cobalt	100%	China, Belgium, Netherlands, US, Japan
3.	Nickel	100%	Sweden, China, Indonesia, Japan, Philippines
4.	Vanadium	100%	Kuwait, Germany, South Africa, Brazil, Thailand
5.	Niobium	100%	Brazil, Australia, Canada, South Africa, Indonesia
6.	Germanium	100%	China, South Africa, Australia, France, US
7.	Rhenium	100%	Russia, UK, Netherlands, South Africa, China
8.	Beryllium	100%	Russia, UK, Netherlands, South Africa, China
9.	Tantalum	100%	Australia, Indonesia, South Africa, Malaysia, US
10.	Strontium	100%	China, US, Russia, Estonia, Slovenia
11.	Zirconium(zircon)	80%	Australia, Indonesia, South Africa, Malaysia, US
12.	Graphite(natural)	60%	China, Madagascar, Mozambique, Vietnam, Tanzania
13.	Manganese	50%	South Africa, Gabon, Australia, Brazil, China
14.	Chromium	2.5%	South Africa, Mozambique, Oman, Switzerland, Turkey
15.	Silicon	<1%	China, Malaysia, Norway, Bhutan, Netherlands

Table.1 The net import reliance for critical minerals of India (2020) (Source: A report on 'Unlocking Australia-India Critical Minerals Partnership Potential' by Australian Trade and Investment Commission, July 2021)

Note:



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- **Limited Domestic Reserves:** India has limited reserves of critical minerals such as **lithium, cobalt, and other rare earth elements**.
 - Most of these minerals are **imported, making India heavily dependent on other countries for its supply**. This reliance on imports can create vulnerability in terms of price fluctuations, geopolitical factors, and supply disruptions.

- **Increasing Demand for Minerals:** The manufacturing of renewable energy technologies and the transition to electric vehicles necessitate larger quantities of minerals such as **copper, manganese, zinc, lithium, cobalt, and rare earth elements**.
 - **India's limited reserves and higher requirements make it reliant on foreign partners to meet domestic needs.**

Types of Bills

TYPES OF BILLS

Ordinary Bills

- Concerned with any matter other than financial subjects

Money Bills

- Concerned with financial matters like:
 - Taxation
 - Public expenditure
 - Regulation of borrowing of money by Union govt
 - Consolidated and Contingency Funds of India

Financial Bills

- Concerned with financial matters but different from money bills:
 - FB (I) – e.g. – a bill that contains a borrowing clause but does not exclusively deal with borrowing
 - FB (II) – Provisions involving expenditure from Consolidated Fund of India, but excluding matters mentioned Money bill

Constitution Amendment Bills

- Concerned with amending the provisions of Constitution

TYPES OF BILLS

Features	Ordinary	Money	Financial (I)	Financial (II)	Const. Amendment
Article	107, 108	110	117 (1)	117 (3)	368
Introduced in	Both LS & RS	Only LS	Only LS	Both LS & RS	Both LS & RS (but not state legislature)
Introduced by	Minister or pvt member	Only minister	Minister or pvt member	Minister or pvt member	Minister or pvt member
Recommendation of President (introduction)	Not required	Required	Required	Only req. for consideration	Not required
Amendment/ rejection by RS	Can do	Can only recommend (not binding)	Can do	Can do	Can do
Joint Sitting for deadlock	Summoned by President	No provision	Summoned by President	Summoned by President	No provision
President's Role	Reject/ approve/ return for reconsideration	Reject or approve but no return	Reject/approve/ return	Reject/ approve/ return	Must approve (can't reject/ return)

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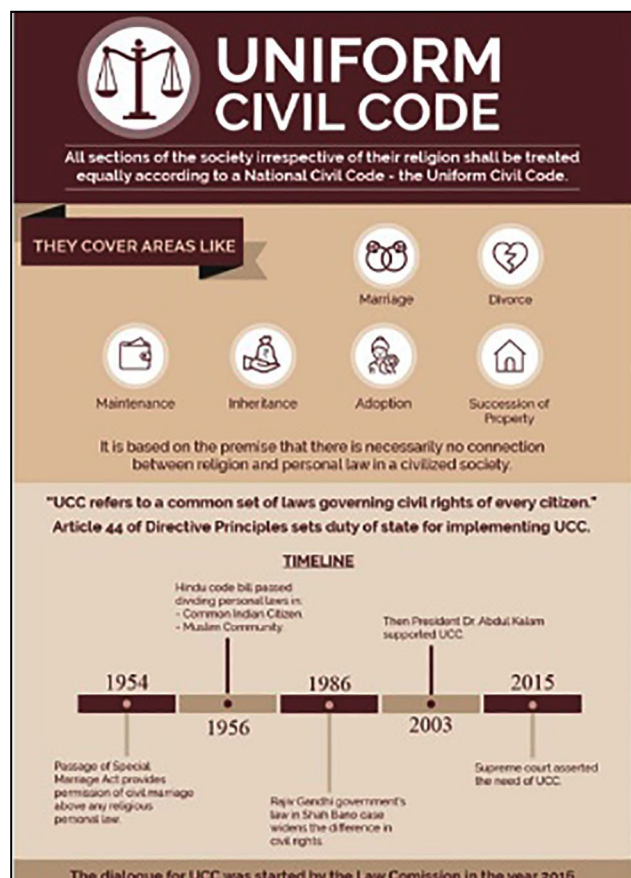
Note:

Need for UCC in India

Why in News?

Indian Prime Minister in his recent address expressed his support for the **implementation of a Uniform Civil Code (UCC)** in India, stating that India cannot function efficiently with a system of “separate laws for separate communities”.

What is a Uniform Civil Code?



➤ Origin and History:

- The **British government's 1835 report** in colonial India called for uniform codification of Indian law, including crimes, evidence, and contracts.
 - However, the **Lex Loci Report of October 1840** suggested that personal laws of Hindus and Muslims should be excluded from this codification.
- As British rule progressed, the **B N Rau Committee was formed in 1941** to codify Hindu law, leading to the enactment of the **Hindu Succession Act in 1956**.

➤ Constituent Assembly's Views on UCC:

- During the debates in the **Constituent Assembly**, the inclusion of the UCC sparked significant discussion.
 - There was a vote, **resulting in a 5:4 majority, where it was decided by the sub-committee on fundamental rights**, led by **Sardar Vallabhbhai Patel**, that the UCC would not be included as a fundamental right.
 - Dr. B R Ambedkar, while drafting the Constitution, stated that a UCC was desirable but should remain voluntary until the nation was socially prepared to accept it.
 - As a result, the UCC was placed in the Directive Principles of State Policy (DPSP) (**Article 44**).

Note: In India, personal law subjects like marriage, divorce, inheritance come under **Concurrent list (7th Schedule)**.

What are the Arguments in Favour of UCC?

- **Celebrating Diversity, Strengthening Unity:** It will promote national integration and **secularism** by removing the distinctions and contradictions based on religious personal laws and creating a common identity for all citizens.
 - It would also foster a sense of unity and harmony among diverse communities.
 - For example, UCC would enable **inter-faith marriages** and relationships without any legal hurdles or social stigma.
- **Empowering Women through Uniformity:** It would ensure gender justice and equality by abolishing the discriminatory and oppressive practices against women in various personal laws, such as **polygamy, unequal inheritance, etc.**
- **Streamlining Laws for Legal Efficiency:** India's current legal system is **burdened with complex and overlapping personal laws**, leading to confusion and legal disputes.
 - A UCC would **simplify the legal framework** by consolidating and harmonising various laws into a single code.
 - This would **enhance clarity, ease of implementation, and reduce the burden on the judiciary**, ensuring a more efficient legal system.
- **Drawing Inspiration from Global Success Stories:** Many countries across the world like France, have implemented a uniform civil code.

Note:

- A UCC is the sign of a modern progressive nation implying that it has **moved away from caste and religious politics**.

What are the Arguments Against the UCC?

- **Threat to Minority Rights:** India's strength lies in its diverse society, and personal laws have been developed to accommodate these diversities.
 - Critics argue that **imposing a single code might undermine the cultural and religious autonomy of minority communities**, leading to feelings of alienation and marginalisation.
- **Judicial Backlog:** India **already faces a significant backlog of cases**, and implementing a UCC could exacerbate the situation.
 - The **extensive legal reforms necessary to harmonize personal laws into a single code would demand significant time and effort**.
 - Consequently, **during this transitional period, the legal system may experience an increased burden** due to the emergence of new cases challenging the constitutionality of the UCC.
- **Complexities within UCC in Goa:** Goa's implementation of a UCC has been praised by the Supreme Court in 2019. However, the **ground reality reveals complexities and legal pluralities within the state's UCC**.
 - The UCC in Goa permits a **specific form of polygamy for Hindus and does not extend the Shariat Act to Muslims** (they are governed by Portuguese and Shastric Hindu laws).
 - Additionally, **catholics enjoy certain privileges, such as exemption from marriage registration and the ability of Catholic priests to dissolve marriages**.
 - This highlights the **complexity of personal laws in India, even within a state known for implementing a UCC**.

What are the Efforts Towards UCC in India?

- **Statutory Provision:**
 - **Special Marriage Act, 1954:** Under the act, civil marriage is permitted for any citizen, regardless of religion, allowing any Indian to get married outside of religious custom.
- **SC Judgements Recommending the Need for UCC:**
 - **Shah Bano Case 1985**
 - **Sarla Mudgal Case 1995**
 - **Paulo Coutinho vs Maria Luiza Valentina Pereira (2019)**

What is the Stance of Law Commission Related to UCC?

- **Law Commission of India (2018):** It stated that **UCC is neither necessary nor desirable at this stage, as it would be counter-productive for the harmony of the nation**.
 - It also suggested that **reforms in personal laws should be done by amendments and not by replacement**.
- **Recently, 22nd Law Commission of India** has chosen to seek the opinions and suggestions of the general public as well as recognised religious organizations regarding the UCC.

What are the Challenges in Implementing UCC?

- **Political Inertia:** No political party has shown a **sincere and consistent commitment to enact UCC**, as it is seen as a **sensitive and divisive issue that may alienate their vote banks**.
 - Moreover, there is no consensus among various parties and stakeholders on the scope, content and form of UCC, as different groups have different views and interests on personal matters.
- **Lack of Awareness and Education:** Many people in India are not **even aware of their legal rights and obligations under their personal laws** or under the common laws.
 - They are also **not educated about the benefits and drawbacks of UCC** or about the experiences of other countries that have adopted or rejected UCC.
 - They are **often influenced by misinformation or propaganda** spread by vested interests or communal forces.

Government e-Marketplace

Why in News?

During the 'Kreta-Vikreta Gaurav Samman Samaroh 2023' event held in New Delhi, **significant growth in procurement from the Government e-Marketplace (GeM)** over the past three years, was highlighted.

What is GeM?

- **About:**
 - GeM facilitates **online procurement of common use Goods & Services** required by various Government Departments / Organisations / PSUs.

Note:

- The initiative was launched in **August 2016**, by the **Ministry of Commerce and Industry, Government of India**.
- The current version of GeM, i.e., **GeM 3.0** was launched on **January 26, 2018**.
- It provides the **tools of e-bidding, reverse e-auction and demand aggregation** to facilitate the government users, achieve the best value for their money and aims to **enhance transparency, efficiency and speed in public procurement**.

Note: Public procurement refers to the **process by which governments and state-owned enterprises purchase goods and services from the private sector**.

Public procurement amounts to 15-20% of a India's GDP and therefore an efficiently run public procurement process is critical to our nation's economy.

➤ **GeM Statistics:**

- As of March 31, 2023, **GeM recorded a staggering ₹2 lakh crore of Gross Merchandise Value** (value of goods sold via customer-to-customer or e-commerce platforms) **during FY 2022-23**, contributing to a **cumulative GMV of over ₹4.29 lakh crore since its inception**.
- The total number of transactions on GeM **has also crossed 1.54 crore**.
- Studies indicate that the platform has generated minimum savings of about 10%, amounting to approximately **₹40,000 crore worth of public money**.

➤ **Significance:**

- GeM eliminates **human interface in vendor registration, order placement and payment processing**, thereby reducing delays and corruption.
- It provides **complete visibility of all transactions on its platform**, ensuring fair and equal opportunity for all sellers.
- It enables **price comparison and selection of competitive and quality products**.
- It ensures compliance with **standards and specifications for all its listed products and services** and offers a user-friendly online feedback system.
- It promotes innovation by providing **opportunities for startups, MSMEs, women entrepreneurs and artisans** to showcase their products and services.

➤ **Major Developments on GeM:**

- **GeM Outlet Stores:** GeM has launched outlet stores for various categories of products such as

SARAS, Ajeevika, Tribes India, Startup Runway, Khadi India, India Handloom, India Handicraft, Divyangjan etc.

- **GeM-CII MoU:** GeM has signed a memorandum of understanding (MoU) with **Confederation of Indian Industry (CII)** to establish a **GeM-CII Centre of Excellence (CoE)**, which will provide training, research and advocacy support to GeM.
- **GeM, CSC and India Post:** The **integration of India's postal system India Post and Common Service Center (CSC)** with the GeM is operational across the country.
 - This allows India Post to **provide logistics service into the remotest parts of the country** to sellers and buyers transacting via GeM.
- **Bamboo Market Window:**
 - The National Bamboo Mission and GeM have created a dedicated window on the GeM portal for marketing Bamboo Goods.

CSR Guidelines for Empowering Ports

Why in News?

Recently, the Ministry of Ports, Shipping & Waterways has launched '**Sagar Samajik Sahayyog**,' its new guidelines for **Corporate Social Responsibility (CSR)**, aiming to empower ports to address local community issues in a more cooperative and swift manner.

What are the Key Highlights of the Guidelines?

➤ **CSR Funding:**

- Ports in India will **allocate a specific percentage** of their net annual profit towards CSR activities. The CSR budget for ports will be **based on their respective turnover** for the year, the division will be as follows:
 - Ports with an annual turnover of less than Rs 100 crores will **spend 3-5% on CSR**.
 - Ports with a turnover between **Rs 100 to 500 crores will spend 2-3%**.
 - Ports with a turnover exceeding Rs 500 crores will spend **0.5-2%**.
 - 2% of the total CSR expenses will be **dedicated to project monitoring by the ports to ensure effective implementation** and monitoring of the respective CSR projects.

Note:



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➤ **CSR Committee:**

- Each **Major Port** will establish a corporate social responsibility committee, headed by a **deputy chairperson** of major port to plan and implement CSR initiatives.
- The committee will consist of **two other members**. CSR projects must be implemented into the business plans of major ports, **addressing social and environmental concerns** related to their operations.
- A CSR plan will also need to be prepared for each financial year.

➤ **Allocation and Focus Areas:**

- The CSR projects and programmes will focus on activities specified in **Section 70 of the Major Port Authorities Act, 2021**.
 - According to Section 70 of the Act, the organization may use its funds for providing **social benefits** including development of infrastructure in areas of education, health, housing, skill development, training and recreational activities for its own employees, customers etc.
 - **20% of the CSR expenses** must be **earmarked for the Sainik Kalyan Board** at the district level, the National Maritime Heritage Complex, and the National Youth Development Fund.
 - Additionally, **78% of the funds** should be **directed towards social and environmental welfare initiatives** benefiting the community.
- These include projects related to **drinking water, education, vocational training**, non-conventional and renewable energy sources for electricity, health and family welfare, livelihood promotion for **Economically Weaker Sections (EWS)**, community centers, and hostels.
- **2% of the total CSR expense** is allocated for project monitoring under the CSR programs by the ports.

What is the Significance of the Guidelines?

- The guidelines **enable ports to directly undertake CSR activities**, fostering community welfare and development.
- By embracing a framework that **includes local communities as partners**, CSR has the potential to drive positive change and **become a significant catalyst for progress**.
- The guidelines aim to make **CSR a potent force for positive transformation**. This initiative reflects the

government's commitment to **maximum governance and community-centric development**.

What is Corporate Social Responsibility (CSR)?➤ **About:**

- The concept of CSR is the **idea that companies should assess and take responsibility** for their effects on the environment and on social welfare, and to promote **positive social and environmental change**.
- The four main types of corporate social responsibility are:
 - Environmental Responsibility
 - Ethical Responsibility
 - Philanthropic Responsibility
 - Economic Responsibility
- The Corporate Social Responsibility provisions within **Companies Act 2013 is applicable to companies with an annual turnover of 1,000 crore** and more, or a net worth of Rs. 500 crore and more, or a net profit of Rs. 5 crore and more.
 - The Act requires companies to set up a **CSR committee** which shall recommend a Corporate Social Responsibility Policy to the Board of Directors and also monitor the same from time to time.

➤ **Activities under CSR:**

- Specified under **Schedule VII of the Companies Act 2013**, some major activities include:
 - Eradicating **hunger, poverty and malnutrition** and promotion of education, gender equality.
 - Fighting **Acquired Immune Deficiency Syndrome (AIDS)**, Human Immunodeficiency Virus, and other disorders
 - Ensuring Environmental Sustainability
 - Protection of **National Heritage**, Art and Culture including restoration of buildings and sites of historical importance and works of art.
 - Measures for the benefit of armed forces veterans, war widows and their dependents.
 - Training to promote rural sports, nationally recognized sports, paralympic sports and **Olympic sports**
 - **Contribution to the PM's National Relief Fund** or any other fund set up by the Central Government for socio-economic development and relief.

Note:

ART Regulations: Impact on Cost and Conception Opportunities

Why in News?

Recently, industry insiders have raised concerns about the restrictions imposed by the provisions of the **Assisted Reproductive Technology (ART) Regulations Act, 2021** introduced by the Health Ministry.

- These concerns pertain to the **increased costs and limited conception opportunities** faced by couples seeking ART treatments, despite the regulations aiming to enhance medical care and security for donors and patients.

What is Assisted Reproductive Technology?

- ART refers to medical procedures used to help **individuals or couples conceive a child**.
- It involves various techniques, such as **in vitro fertilization (IVF)**, **intracytoplasmic sperm injection (ICSI)**, Gamete Donation, Intrauterine Insemination, Pre-implantation Genetic Testing, Surrogacy, Altruistic Surrogacy.
- ART is often used by individuals or couples facing **fertility challenges**, including **infertility, genetic disorders, or reproductive system abnormalities**.
- ART procedures typically involve the manipulation of sperm, eggs, or embryos in a laboratory setting before transferring them to the woman's uterus.

What are the Main Features of the ART Regulations Act, 2021?

- **Registration:** Every ART clinic and bank must be registered under the **National Registry of Banks and Clinics of India**, maintaining a central database.
 - Registration is valid for **five years and can be renewed for another five years**.
 - Violations of the Act may result in **cancellation or suspension** of registration.
- **Conditions for Sperm & Egg Donation:** Registered ART banks can screen, collect, and store semen from **men aged 21-55 years**. Eggs can be stored from **women aged 23-35 years**.

- **Donor Limits:** Oocyte donors must be **ever-married women with at least one living child of their own (minimum three years of age)**.
 - An oocyte donor **can only donate once in her lifetime**, and a **maximum of seven oocytes can be retrieved**.
- **Gamete Supply:** An ART bank cannot supply gametes from a **single donor to more than one commissioning couple** (couple seeking services).
- **Parental Rights:** Children born through ART are deemed the **couple's biological child**, and the **donor has no parental rights**.
- **Consent:** Written informed consent is required from both the couple and the donor for ART procedures.
- **Regulation of ART Processes:** The National and State Boards formed under the **Surrogacy Act 2021** will regulate ART services.
- **Insurance Coverage:** Parties seeking ART services must provide **insurance coverage in favor of the oocyte donor**, covering any loss, damage, or death of the donor.
- **Preventing Sex Selection:** Clinics are prohibited from offering to provide a **child of pre-determined sex, ensuring non-discriminatory practices**.
- **Offences:** Offences include abandonment or exploitation of children born through ART, sale or trade of embryos, and exploitation of the couple or donor.
 - Punishment includes **imprisonment of 8-12 years and a fine of Rs 10-20 lakhs**.
 - Clinics and banks are prohibited from advertising or offering sex-selective ART.
 - **Offences carry imprisonment of 5-10 years and a fine of Rs 10-25 lakhs.**

What are the Challenges and Concerns Regarding ART Regulations, 2021?

- **Increased Cost:** The regulations may lead to **higher treatment costs** due to additional requirements such as **insurance, testing, and registration fees**.
- **Reduced Availability:** Limitations on the **number of donors and cycles per donor** may result in a **shortage of suitable donors**, making it harder for couples to find matching gametes.
 - **Fertility rates are declining in India** and worldwide, making the limited availability of donors a significant challenge.

Note:

- **Challenges in Finding Suitable Donors:** The restrictions may pose challenges for doctors and couples in finding donors that **meet specific requirements** or preferences.
- **Discouragement for Potential Donors:** Concerns over legal and social repercussions, as well as **lack of incentives**, may discourage potential donors from participating in the ART process.

Special Assistance to States for Capital Investment 2023-24

Why in News?

The Department of Expenditure under the Finance Ministry of India has approved **capital investment proposals of Rs. 56,415 crore for 16 states in the current financial year 2023-24.**

- These loans are granted under the central scheme known as "**Special Assistance to States for Capital Investment 2023-24**".
- The **16 states include** Arunachal Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Mizoram, Odisha, Rajasthan, Sikkim, Tamil Nadu, Telangana, and West Bengal.

What is the Special Assistance to States for Capital Investment 2023-24 Scheme?

- **Background:**
 - The Scheme for financial assistance to States for capital investment/expenditure, first instituted by the **Ministry of Finance in 2020-21 in the wake of Covid-19 Pandemic**, has given a very timely boost to capital spending by the state.
- **About:**
 - The scheme was announced in the **Union Budget 2023-24** in continuation of a similar push for capex from the last three years.
 - Under the scheme, special assistance is being **provided to the state governments in the form of 50-year interest free loan up to an overall sum of Rs. 1.3 lakh crore during the financial year 2023-24.**

SPECIAL ASSISTANCE TO STATES

State	Amount (in ₹ cr)	State	Amount (in ₹ cr)
Bihar	9640	Chhattisgarh	3195
MP	7850	Telangana	2102
West Bengal	7523	AP	1255
Rajasthan	6026	Haryana	1093
Odisha	4528	HP	826
Tamil Nadu	4079	Mizoram	399
Karnataka	3647	Sikkim	388
Gujarat	3478	Goa	386

- **Parts:**
 - The scheme has **eight parts**, **Part-I** being the largest with allocation of **Rs. 1 lakh crore**. This amount has been allocated amongst states in proportion to their share of central taxes and duties as per the award of the **15th Finance Commission**.
 - Other parts of the scheme are **either linked to reforms or are for sector-specific projects.**
 - **Part-II** provides incentives to states for scrapping of old vehicles and setting up of automated vehicle testing facilities;
 - **Part-III and IV** provide incentives to states for reforms in **urban planning** and urban finance;
 - **Part-V** provides funds for increasing the housing stock for police personnel and their families within the police stations in urban areas.
 - **Part-VI** of the scheme supports the vision of national integration, **Make in India** and **One District One Product** by promoting cultural diversity and local products through Unity Mall projects.
 - Under **Part-VII**, Rs. 5,000 crore is provided as financial assistance to states for **establishing libraries with digital infrastructure** at the **Panchayat and Ward level**, primarily benefiting children and adolescents.
- **Objectives of the Scheme:**
 - The scheme is expected to have a **higher multiplier effect on the economy by stimulating demand and creating jobs.**
 - The scheme also aims to enhance the pace of projects in key sectors such as **Jal Jeevan Mission** and **Pradhan Mantri Gram Sadak Yojana** by providing funds for meeting the state share.

Note:



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- The scheme also **seeks to encourage states to undertake reforms in urban planning and urban finance** to improve the quality of life and governance in cities.

What is Capital Expenditure in India?

➤ Capital Expenditure (Capex):

- It refers to the funds allocated by the government for the **acquisition, construction, or improvement of physical assets** such as infrastructure, buildings, machinery, and equipment.
- It is **considered to be productive and growth enhancing** as it adds to the **productive capacity of the economy** and generates income and employment in the future.
- The Indian government **allocates capital expenditure** through its annual budget, which is presented by the finance minister.
 - The capital investment outlay has experienced a consecutive **three-year increase**, reaching Rs 10 lakh crore, which accounts for **3.3% of the GDP**, marking a significant growth of **33% (Union Budget 2023-24)**.

➤ Effective Capital Expenditure:

- The capital expenditure presented in the budget **does not include the spending by the government on creating capital assets through grants-in-aid to states and other agencies**.
 - These grants are classified as revenue expenditure in the budget, but **they also contribute to the creation of fixed assets** such as roads, bridges, schools, hospitals, etc.
 - Therefore, to capture the true extent of public investment by the central government, a **concept of 'effective capital expenditure' has been introduced**.
- **Effective capital expenditure** is defined as the sum of capital expenditure and grants for creation of capital assets.
 - It is budgeted at Rs 13.7 lakh crore or **4.5% of GDP (Union Budget 2023-24)**.

Protecting India's Forest Frontline

Why in News?

Recently, **poachers** killed a forester in **Odisha's Simlipal tiger reserve**, marking the second such death in

a span of a few weeks when another forest guard was shot dead.

- India's **frontline forest staff, including contract laborers, guards, foresters, and rangers**, have been engaged in a longstanding and uneven battle against poachers, illegal miners, tree-fellers, mass encroachers, and insurgents.

Who are the Forest Officers?

- Forest officers are **public servants employed by the Government for the administration and governance of forests** across the territory of India.
 - All the States in India have formulated their own legislation for governing forests in their territory, with the **Indian Forest Act, 1927** as the base (forests being a **concurrent list** subject under **7th Schedule**).
- The **three primary acts** which bestow power upon forest officers are:
 - Indian Forest Act, 1927.
 - **The Wild Life (Protection) Act, 1972.**
 - **The Forest Conservation Act, 1980 .**
- Forest staff's **primary responsibility is to safeguard valuable and limited resources** such as endangered animals, trees, sand, boulders, **minerals**, and forest land. **As a result, they face a constant and relentless onslaught.**

What are the Concerns

Associated with Foresters' Safety?

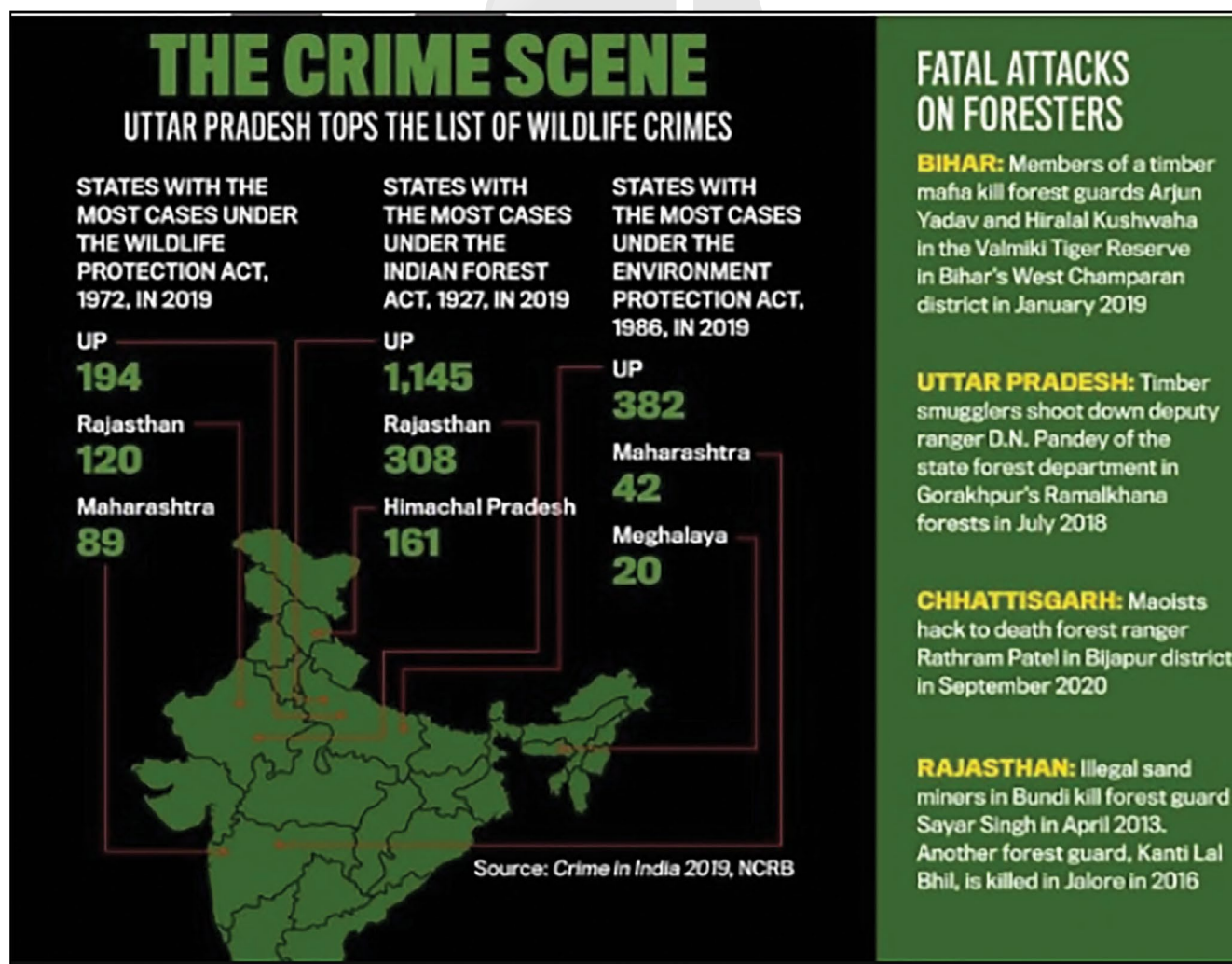
- **Conditional Armed Status of Forest Guards:** Forest guards are not always unarmed. Depending on the state, they may be equipped with various weapons. However, **due to uncertain law and order situations, especially in insurgency-affected regions**, forest guards **often face restrictions** on carrying these weapons.
 - In the case of Simlipal, which **falls within the red corridor** stretching from Chhattisgarh's Indravati to Bihar's **Valmiki tiger reserves**, forest staff had discontinued carrying guns for the same reason.
- **Limited Authority for Proactive Use of Weapons:** Furthermore, forest officials do not possess the authority to proactively use their weapons. **Like any other citizens, they are only entitled to exercise their right of private defense** as outlined in **Sections 96 to 106 of the Indian Penal Code (IPC)**.

Note:



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- This means they can use force, including weapons, only to protect themselves or others from imminent harm or danger.
- **Risks and Considerations of Carrying Firearms:** Weapons can indeed pose a risk even in situations without the presence of insurgents as there are certain challenges (potential accidents or misuse of weapons) and considerations that arise when it comes to carrying and using firearms.
- **Wildlife-Human Conflict:** Foresters often encounter **conflicts between wildlife and human populations**. This includes instances of crop raiding by animals, attacks on humans by wild animals, and encroachment of forest habitats by human settlements.
- **Lack of Manpower:** Forest establishments in India tend to **prioritise cumbersome bureaucratic processes and administrative matters** over the welfare and support of the frontline workforce.
- This can be problematic as it **creates a situation where there are too many vacant positions** within forest departments across the country.
- As a result, **there are insufficient numbers of personnel on the ground to effectively protect the forests** and ensure their own safety.
- **Lack of Effective Defense:** According to the International Ranger Federation, a total of 31 forest field staff members lost their lives while on duty in India in 2021. **Out of these cases, only 8 were classified as homicides** and the rest were attributed to factors like forest fires, elephant/rhino attacks and motor accidents.
- In some instances, the casualties occurred not because they were unarmed, but because they did not know how to fire their weapons.



Note:



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Enhancing Legal**Protection for Forest Officers:**

- In July 2010, Assam took a significant step by implementing the provisions of Section 197(2) of the **Criminal Procedure Code (CrPC)** for all forest officers.
 - This provision granted them protection from arrest and criminal proceedings, unless a magisterial investigation determined that the use of firearms was deemed “unnecessary, unwarranted, and excessive.” The state had to review and accept the findings of the investigation.
- Following a series of tiger poaching cases in 2012, Maharashtra also issued a similar order.

Why are Foresters not Provided with Excess Power in Terms of Using Weapons?

- **Protection of Ecosystems and Wildlife:** Foresters have a critical role in safeguarding forests, wildlife, and their habitats. Excessive powers could lead to **unintended harm to ecosystems and wildlife** if firearms are used indiscriminately or without proper justification.
- **Potential for Misuse:** Excessive powers could increase the risk of misuse or misconduct by foresters. It is **important to maintain checks and balances** to prevent misuse of firearms and ensure that foresters act in accordance with the law.
- **Civilian Law Enforcement Perspective:** Foresters are **primarily tasked with conservation** and environmental protection, **rather than law enforcement**.
 - Providing them with excessive powers in using weaponry **could blur the line between their conservation roles and the responsibilities of law enforcement agencies**, potentially leading to confusion and conflicts in their duties.
- **Balancing Safety and Potential Risks:** Arming foresters with guns in remote jungle areas may **increase the vulnerability of the local population**.
 - The presence of firearms in the hands of foresters could potentially escalate conflicts and result in unintended consequences, **especially in areas where tensions already exist between foresters and local residents**.

WHO Issues Alert for Substandard Cough Syrups Produced in India

Why in News?

World Health Organisation (WHO) has raised concerns over substandard cough syrups made in India, **linked to 300 child deaths, containing high levels of diethylene glycol and ethylene glycol**, posing health risks.

- The organization has issued an alert for seven syrups produced in India, while the country's **Drugs Controller General** has mandated testing of cough syrups by specified labs before export.

What are Ethylene Glycol and Diethylene Glycol?

- Ethylene glycol and diethylene glycol are **toxic alcohols with a slightly sweet taste**.
- Contamination of cough syrups with these glycols can occur, especially in products containing **paracetamol**.
 - Paracetamol in cough syrups is good and safe for children with infections. It is a **pain killer which is good at reducing fever**.
- **Diethylene glycol and ethylene glycol are adulterants** that are sometimes illegally used as solvents in liquid drugs as an alternative to non-toxic solvents such as glycerine or propylene glycol to cut costs.
 - A fatal oral dose is around 1,000-1,500 milligrams per kilogram of body weight.
 - Toxicity can also occur with lower doses consumed over several days or weeks.
 - Symptoms of contamination **may not appear until large amounts have been consumed**.
- In addition to its use in **antifreeze**, **ethylene glycol is used as an ingredient in hydraulic fluids, printing inks, and paint solvents** and diethylene glycol is used in the commercial preparation of **antifreeze, brake fluid, cigarettes, and some dyes**.

What are the Risks**Associated with Substandard Cough Syrups?**

- **Presence of Harmful Substances:**
 - Substandard cough syrups may contain high levels of diethylene glycol and ethylene glycol, which can damage the kidneys and pose a serious health risk.

Note:

- **Unscientific Combinations:**
 - Some cough syrups may have unscientific combinations of chemical components that can interact with each other and potentially cause harm.
- **Lack of Therapeutic Relevance:**
 - Substandard cough syrups may lack therapeutic relevance, meaning they may not effectively treat the underlying condition causing the cough.
- **Adverse Effects on Children:**
 - Certain cough syrups containing codeine can be addictive and even lethal if given to children. Drowsiness, dizziness, blurred vision, nausea, and difficulty in verbalizing can also be experienced, indicating potential harm.

What are the Related Regulations in India?

- **The Drugs and Cosmetics Act, 1940 :**
 - The Drugs and Cosmetics Act, 1940 and Rules 1945 have entrusted various responsibilities to

central and state regulators for regulation of drugs and cosmetics.

- It provides the regulatory **guidelines for issuing licenses to manufacture Ayurvedic, Siddha, Unani medicines.**
- It is mandatory for the manufacturers to adhere to the prescribed requirements for licensing of manufacturing units & medicines including proof of safety & effectiveness, compliance with the **Good Manufacturing Practices (GMP).**
- **Central Drugs Standard Control Organisation (CDSCO):**
 - The CDSCO is the Central Drug Authority for discharging functions assigned to the Central Government under **the Drugs and Cosmetics Act.**
- **Major Functions:**
 - Regulatory control over the import of drugs, approval of new drugs and clinical trials.
 - Approval of certain licences as Central Licence Approving Authority.

Major Bodies Regulating Drugs and Pharmaceutical in India

Ministry of Health and Family Welfare	Ministry of Chemicals and Fertilizers	Ministry of Commerce	Ministry of Science and Technology	Ministry of Environment
Directorate General of Health Services (DGHS) Indian Council of Medical Research (ICMR)	Department of Pharmaceuticals	Patent Office	Department of Biotechnology (DBT)	Environmental clearance for manufacturing
Central Drugs Standard Control Organization (CDSCO) headed by Drug Controller General of India, DCGI (I) + Statutory Committees + Advisory Committees	National Pharmaceutical Pricing Authority (NPPA); Drugs (Prices Control) Order (DPCO) 2013	Controller General of Patent	Council of Scientific and Industrial Research (CSIR) Laboratories	

Shorter Medical Course to Address Rural Doctor Shortage

Why in News?

Recently, the West Bengal Chief Minister proposed a Shorter Medical Course for medical practitioners who would serve in **primary health centers (PHCs)** in rural areas.

- This proposal aims to address the chronic **shortage of doctors in rural regions** where a significant percentage (around 65%) of the Indian population resides.
- Similar initiatives have been implemented in other states, such as **Chhattisgarh**, which introduced a three-year community health program producing **Rural Medical Assistants (RMAs)** to serve in villages.

Note:



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What is the Proposed**Shorter Medical Course for Rural Areas?****➤ About:**

- A shorter medical course proposed in India is a **three-year diploma course** for medical practitioners who would serve in primary health centres (PHCs) in rural areas. This course is different from the regular **MBBS course**.
- The shorter medical course focuses on providing **first-level care in rural areas**, while the regular MBBS course covers **all aspects of medical science and practice**.
 - The shorter medical course may not **train trainees adequately** to deal with **complex and diverse conditions** in rural areas, while the regular MBBS course prepares doctors for any kind of situation.

➤ Benefits:

- **Increased availability of medical professionals** in rural areas.
- **Rapid response** to healthcare needs and emergencies.
- Cost-effective solution for resource-constrained regions.
- Enhanced primary healthcare services in rural communities.

➤ Drawbacks:

- **Limited specialization** in complex medical fields.
- Insufficient exposure to **rural healthcare conditions**.
- Potential dilution of **medical education standards**.
 - It will raise concerns about potential discrimination, as it could result in **less qualified healthcare providers** being assigned to rural populations while urban settings receive more qualified practitioners.
- Does not address underlying **structural issues contributing** to the shortage of doctors.

What is the Status of Doctors in Rural India as per Rural Health Statistics Report 2021-22?

- The **Rural Health Statistics report** reveals an acute shortage of specialist doctors at **Community Health Centers (CHCs)** in India.

- Nearly 80% of the required specialists are unavailable.
- There is a shortfall of specialist doctors, including **surgeons (83.2%), obstetricians and gynaecologists (74.2%), physicians (79.1%) and paediatricians (81.6%)**.
- The number of specialist doctors in CHCs has seen a 25% increase from 3,550 in 2005 to 4,485 in 2022.
 - However, the growth in **CHCs has resulted in an increased requirement for specialist doctors**, creating a disparity.
- In addition to the shortage of specialist doctors, there is also a lack of **female health workers** and auxiliary **nursing midwives** in PHCs and sub-centers, with upto 14.4% of these posts lying vacant.

What are the Challenges in Addressing the Shortage of Doctors in Rural Areas?**➤ Inadequate Infrastructure and Resources:**

- Limited healthcare facilities and resources hinder the attraction and retention of doctors in rural areas.

➤ Limited Access to Specialized Care:

- The scarcity of specialists in rural communities results in delayed or inadequate treatment for complex medical conditions.

➤ Aversion to Rural Practice:

- Doctors often **prefer urban settings due to better career prospects**, lifestyle preferences, and **limited professional development** opportunities in rural areas.

➤ Unequal Distribution of Medical Colleges:

- **Concentration of medical colleges in urban regions** leads to a lack of healthcare professionals in rural areas.

➤ Retention of Rural Doctors:

- Challenges in providing **sufficient support, amenities, and growth opportunities** make it difficult to retain doctors in rural communities.

➤ Socioeconomic Factors:

- Poverty, limited educational opportunities, and underdeveloped infrastructure contribute to the overall shortage of doctors in rural areas.

➤ Educational Disparities:

- Unequal access to **quality medical education widens the gap** between urban and rural healthcare services.

Note:



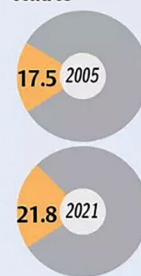
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India still grapples with a shortage of medical staff

Category of medical staff

Per cent of vacancies

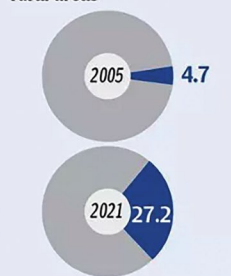
Doctors in rural primary health centres



Specialists in rural community health centres



Auxiliary nursing midwives at PHCs and sub-centres in rural areas



What are the Recent Government Initiatives Related to Healthcare?

- Accredited Social Health Activists (ASHA)
- National Health Mission
- Ayushman Bharat
- Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)
- National Medical Commission
- PM National Dialysis Programme
- Janani Shishu Suraksha Karyakram (JSSK)
- Rashtriya Bal Swasthya Karyakram (RBSK)

UPI Payments: Empowering Users, Challenging Banks

Why in News?

The rapid rise in **United Payments Interface (UPI)** transactions in India has led to the introduction of **various daily limits** by banks and apps, creating a complex landscape of limitations in terms of value and volume.

- The surge in UPI transactions has revealed the need for continuous development and improvement of **banking infrastructure** and technological capabilities.

What are the Daily Limits on UPI Payments?

- The **National Payments Corporation of India (NCPI)** set a limit of **20 transactions per day** and **₹1 lakh per day in 2021**. However, banks and apps have implemented their own limits, adding to the complexity.
 - For instance, ICICI bank allows 10 transactions in 24 hours, while Bank of Baroda and HDFC Bank allow 20 transactions in the same period.

- Certain specific categories of transactions, such as **capital markets, collections, insurance, and forward inward remittances**, have a **higher limit of ₹2 lakh**.
- For UPI-based **ASBA (Application Supported by Blocked Amount system) IPO** and **retail direct schemes**, the limit for each transaction was increased to ₹5 lakh in December 2021.

What is the National Payments Corporation of India?

➤ About:

- It is an **umbrella organisation for all retail payments systems** in India.
- It was set up with the guidance and support of the **Reserve Bank of India (RBI)** and **Indian Banks' Association (IBA)**.

➤ Objectives:

- To consolidate and integrate the existing multiple systems into a nation-wide uniform and standard business process for all retail payment systems.
- To facilitate an affordable payment mechanism to benefit the common man across the country and propel financial inclusion.

How has the Number of UPI Payments Increased Over Time?

- UPI gained popularity as an alternative to cash after **demonetization** in India.
- The surge in transactions from May 2018 to May 2023 was primarily in **terms of volume rather than value**.
 - In May 2018, the value of UPI transactions was ₹33,288 crore (₹1,756 per transaction).
 - In May 2023, the value rose to Rs.14,89,145 crore (Rs.1,581 per transaction), representing a decrease of Rs.175 per transaction in five years.
- **Recent developments in UPI ecosystem:**
 - **New Rules:**
 - Introduction of interchange fee for **Prepaid Payment Instruments (PPIs) wallet transactions via UPI**, applicable from April 2023. The fee is up to **1.1% on merchants** for **Person to Merchant** transactions above ₹2,000 and will be shared between banks involved in the transaction.
 - **UPI AutoPay feature** for recurring payments **up to ₹5,000**, enhancing customer convenience and merchant retention.

Note:

- **Collaboration:**
 - NPCI has partnered with several countries such as Singapore, UAE, Bhutan and Japan to enable cross-border payments using UPI.

What are the Effects of these Trends for Users and Banks?

- **Positive Impacts:**
 - **Convenience and Efficiency:** Quick and hassle-free digital transactions through smartphones.
 - **Financial Inclusion:** Access to **digital payments** for individuals.
 - **Reduced Cash Dependency:** Minimizing risks and combating illicit transactions.
 - **Enhanced Transparency:** Tracking and monitoring financial activities.
 - **Boost to Digital Economy:** Promoting **digital entrepreneurship** and innovation.
- **Negative Impacts:**
 - **Users:**
 - **UPI as an Alternative to Petty Cash:**
 - Consumers are increasingly using UPI for **smaller transactions, replacing petty cash**. The **declining value per transaction** over time reflects this trend.
 - **Limited Transaction Flexibility:**
 - The complex web of limitations set by different apps and banks on UPI transactions creates confusion and **restricts users' flexibility in terms of transaction volume and value**.
 - Users have to navigate through varying limits, impacting their ability to carry out transactions according to their needs.
 - **Increased Transaction Failures:**
 - The **struggle of banks to upgrade their infrastructure and technical systems** to keep up with the surge in UPI payments can result in transaction failures. This can **frustrate users and hinder their seamless payment experience**.
 - **Banks:**
 - **Infrastructure Challenges for Banks:**
 - Banks face difficulties in keeping up with the surge in UPI payments, leading to transaction failures.

- **Upgrading banking infrastructure and technical systems** is crucial to meet the growing demand.
 - ◆ Banks need to ensure that their **servers are able to handle the increasing volume** and frequency of UPI transactions without any glitches or downtime.
- **Security and Fraud Prevention:**
 - With the rise in UPI transactions, the risk of **cyber threats** and fraudulent activities also increases.
 - Banks need robust security measures, including **encryption, two-factor authentication, and fraud detection mechanisms**, to safeguard user data and prevent unauthorized access.

Face Authentication for PM-Kisan Scheme

Why in News?

Recently, the Ministry of Agriculture & Farmers Welfare, Government of India has rolled out Face Authentication Feature in the **PM-Kisan app** to enhance the efficiency and accessibility of welfare schemes.

- The **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** is also integrating with **Bhashini** to provide farmers information in their native language.
 - Bhashini is the government's **National Public Digital Platform for languages to develop services and products for citizens** by leveraging the power of artificial intelligence and other emerging technologies.

What are the Key Points of the Feature?

- **About:**
 - The face authentication feature **utilizes the iris data** available with the **Unique Identification Authority of India (UIDAI)**, which maintains Aadhaar-related information.
 - The Ministry collaborated with UIDAI to gain access to this feature, thereby ensuring accuracy and reliability.
- **Benefits:**
 - **Enhanced Accessibility:** The face authentication feature **eliminates the need for physical biometric**

Note:



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verification, enabling farmers to complete the e-KYC process conveniently from their mobile phones.

- **Addressing Mobile-Aadhaar Linkage Issues:** By utilizing facial recognition, the scheme accommodates **farmers whose mobile numbers are not linked** with their Aadhaar, ensuring a smoother process for all eligible beneficiaries.
- **Simplified Process for Elderly Farmers:** The new feature overcomes the challenges **faced by elderly farmers**, eliminating the need for them to visit designated centers for biometric authentication.

What is PM-KISAN?

➤ About:

- Under the scheme, the **Centre transfers an amount of Rs 6,000** per year, in three equal installments, directly into the **bank accounts of all landholding farmers** irrespective of the size of their land holdings.
 - It was launched in February 2019.

➤ Funding and Implementation:

- It is a **Central Sector Scheme** with 100% funding from the Government of India.
- It is being implemented by the Ministry of Agriculture and Farmers Welfare.

➤ Identification of Beneficiaries:

- The entire responsibility of identification of beneficiary farmer families rests with the State / UT Governments.

➤ Objective:

- To supplement the **financial needs of the Small and Marginal Farmers** in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income at the end of each crop cycle.
- To protect them **from falling in the clutches of moneylenders** for meeting such expenses and ensure their continuance in the farming activities.

➤ PM-KISAN Mobile App:

- The PM-KISAN Mobile App developed and designed by the **National Informatics Centre** in collaboration with the Ministry of Electronics and Information Technology has been launched.
- The farmers can view the status of their application, update or carry out corrections of their **Aadhaar cards** and also check the history of credits to their bank accounts.

➤ Achievements So Far:

- Over 11 crore farmers across the country **have availed the PM-Kisan scheme**, indicating its widespread reach and impact.
- More than **3 crore women farmers have been included** in the scheme, highlighting its emphasis on gender inclusivity and women empowerment in the agricultural sector.

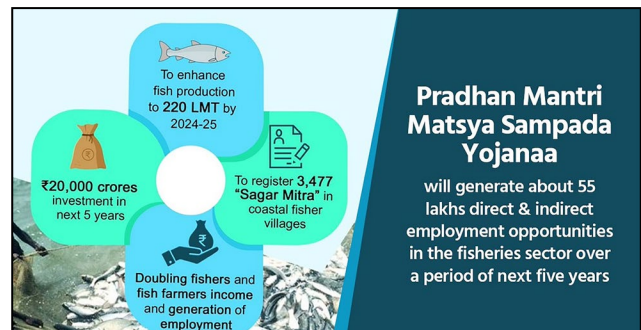
Pradhan Mantri Matsya Sampada Yojana

Why in News?

As **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** enters its **4th year of implementation**, the Department of Fisheries plans to expedite the pace of implementation of the scheme.

- As part of this plan, the Department has scheduled a series of review meetings with states and Union Territories (UTs). The **first review meeting recently took place in the Northeastern Region (NER) of India.**

What is PMSSY?



➤ About:

- It aims **to bring about the Blue Revolution** through sustainable and responsible development of the **fisheries sector in India.**
- PMMSY **was introduced as part of the 'Atma Nirbhar Bharat' package** with an investment of Rs. 20,050 crores, the **highest-ever investment in this sector.**
 - The scheme is **being implemented in all States and UTs for a period of 5 years from FY 2020-21 to FY 2024-25.**

Note:

- In order to facilitate access to institutional credit, fishermen are provided with insurance coverage, financial assistance and a facility of **Kisan Credit Card** (KCC) as well.
- **Implementation:**
 - It is implemented as an umbrella scheme with two separate components namely:
 - **Central Sector Scheme:** The project cost will be borne by the Central government.
 - **Centrally Sponsored Scheme:** All the sub-components/activities will be implemented by the States/UTs, and the cost will be shared between the Centre and State.
- **Objectives:**
 - Harness the **potential of the fisheries sector** in a sustainable, responsible, inclusive and equitable manner
 - **Enhance fish production and productivity** through expansion, intensification, diversification and productive utilisation of land and water
 - **Modernise and strengthen the value chain** including post-harvest management and quality improvement
 - **Double fishers' and fish farmers' incomes** and generate meaningful employment
 - **Enhance the contribution of the fisheries sector** to agricultural **Gross Value Added (GVA)** and exports
 - **Ensure social, physical and economic security** for fishers and fish farmers
 - Build a **robust fisheries management** and regulatory framework
- **Significance:**
 - The **fisheries sector plays an important role in the Indian economy**. It contributes to national income, exports, food and nutritional security as well as employment generation.
 - The **sector provides a livelihood for more than 2.8 crore fishers and fish farmers at the primary level** and several more along the fisheries value chain.
 - It is a **major source of income for a large proportion** of the country's economically disadvantaged population.
 - To improve fish production, it is **important to conduct integrated fish farming and diversify fish production**.

- Further, the fisheries sector has been a major contributor to foreign exchange earnings, with India being one of the world's leading seafood exporters.
 - In FY20, aquaculture products accounted for **70–75% of the country's total fishery exports**.
- **Achievements:**
 - As of 2023, under PMMSY, projects worth **Rs 14,654.67 crore** have been approved from **2020-21 to 2022-23**.
 - As the **3rd largest fish producer** and the **2nd largest aquaculture producer globally**, India recognizes the significance of the fisheries and aquaculture industry.
 - The **fish production reached an all-time high of 16.25 MMT during FY 2021-22** with marine exports touching Rs. 57,586 Crores.

Note:

- **Aquaculture** refers to the breeding, rearing, and harvesting of fish, shellfish, algae, and other organisms living in all types of water environments whereas **Pisciculture** refers to the breeding, rearing, and transplantation of fish by artificial means.

What are the Challenges in the Implementation of the Scheme?

- **Infrastructural and Technological Gap:**
 - The fisheries sector faces a lack of adequate infrastructure and technology for fish production, processing, storage, transportation and marketing.
- **Lack of Human Resource Development:**
 - Lack of skilled and trained manpower and extension services for fish farmers and fishermen affects the adoption of best practices, innovations and standards in the sector.
- **Financial Inclusion and Social Protection:**
 - Inadequate access to timely credit and insurance for fish farmers and fishermen exposes them to various risks and vulnerabilities such as natural disasters, diseases, market fluctuations, etc.
- **Regulatory and Legal Compliance:**
 - The fisheries sector faces a lack of awareness and compliance with the regulatory and legal framework for fisheries management such as fishing rights, licenses, quotas, conservation measures, quality control, traceability, etc. This affects the sustainability and competitiveness of the sector.

Note:



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What are the Other Initiatives Related to Fisheries Sector?

- **Sagar Parikrama**
- **Palk Bay Scheme**
- **Fisheries and Aquaculture Infrastructure Development Fund (FIDF)**

What is the Blue Revolution?

- **About:**
 - The Blue Revolution, with its multi-dimensional activities, **focuses mainly on increasing fisheries production and productivity from aquaculture** and fisheries resources, both inland and marine.
- **Objectives:**
 - To increase **overall fish production** in a responsible and sustainable manner for economic prosperity
 - To modernise the fisheries with a **special focus on new technologies**
 - To **ensure food and nutritional security**
 - To **generate employment** and export earnings
 - To **ensure inclusive development and empower fishers** and aquaculture farmers

What is the Kisan Credit Card Scheme?

- **About:**
 - The **scheme was introduced in 1998** for providing adequate and timely credit support from the banking system, under a single window with **flexible and simplified procedures to farmers for their cultivation** and other needs like the purchase of agriculture inputs such as seeds, fertilizers, pesticides etc. and draw cash for their production needs.
 - The scheme was **further extended for the investment credit requirement of farmers viz. allied and non-farm activities in the year 2004.**
 - In the Budget-2018-19, the **government announced the extension of the facility of KCC** to fisheries and animal husbandry farmers to help them to meet their working capital needs.
- **Implementing Agencies:**
- Commercial Banks
- Regional Rural Banks (RRBs)
- **Small Finance Banks**
- **Cooperatives**

ODOP Sampark Event in Nagaland

Why in News?

Recently, the **Department for the Promotion of Industry and Internal Trade (DPIIT)** and **Invest India**, in collaboration with the **Department of Industries and Commerce, Nagaland** organised the ODOP Sampark Event in Nagaland.

- The event aimed to create awareness about the **One District One Product (ODOP)** and **PM Gati Shakti (Logistics)** initiatives.

What are the Major Highlights of the Event?

- **Enhancing Market Access:** One of the primary objectives of the event was to improve market access for Indian products, particularly from **Nagaland**, in foreign markets like the **European Union (EU)**, **Switzerland**, and others.
 - **Infrastructure Development:** To support the **ODOP products from Nagaland**, various measures to improve logistics facilities were highlighted such as:
 - Leveraging **Krishi UDAN scheme** for better transportation
 - Expanding railway connectivity
 - The **Union Budget 2023-24** has allocated **INR 5000 crores for the construction of Unity Malls across the country**, which will act as centralised marketplaces for ODOP products.
- **ODOP Exhibition:** The event showcased various ODOP products from Nagaland, including **chili, fish, coffee, and turmeric**.

What is the ODOP?

- **About:**
 - It is an initiative to **boost economic growth at the district level by promoting and branding one product from each district of the country.**
 - The idea is to **leverage the local potential, resources, skills, and culture of each district and create a unique identity for them** in the domestic and international markets.
 - **Over 1000 products have been selected from all 761 districts in the country.** The initiative covers a wide range of sectors, including **textiles**,

Note:

agriculture, processed goods, pharmaceuticals, and industrial items.

- Also, multiple ODOP products were displayed at the **World Economic Forum** in January 2023 in the **Indian Pavilion at Davos in Switzerland**.

➤ **Background:**

- The **concept of ODOP was first launched by the Uttar Pradesh government in January 2018**.
 - The scheme was successful in reviving the traditional industries and crafts of the state, such as **chikankari embroidery, brassware, pottery, carpets, leather goods, etc.**
 - Inspired by it, the **central government adopted the concept and launched it as a national initiative.**

➤ **Implementation:**

- The **Ministry of Food Processing Industries (MoFPI)** implements the scheme for the food processing sector.
- The Ministry of Textile inaugurated the '**Lota Shop**' at **National Crafts Museum, New Delhi** under the Central Cottage Industries Corporation of India Limited (CCIC) to showcase and sell the products of ODOP scheme.
- The **Directorate General of Foreign Trade (DGFT)** also aligned its Districts as an **Export Hub initiative with ODOP to boost exports.**

➤ **Significance:**

- **Economic Development:** ODOP aims to strengthen the local economy by identifying a unique product or craft for each district and developing it as a specialty.
 - This approach helps in creating a **diversified and sustainable economic base at the grassroots level**, leading to increased income generation, employment opportunities, and overall economic growth.
- **Entrepreneurship and Skill Development:** The initiative encourages local entrepreneurship by focusing on specific products and crafts.
 - It aims to **provide skill development, capacity building, and technical support to artisans and entrepreneurs**, enabling them to enhance their production capabilities, product quality, and market reach.

- This, in turn, empowers individuals and communities by promoting self-employment and fostering a culture of innovation.

- **Preserving Traditional Knowledge and Heritage:** India has a **rich heritage of traditional crafts and products** that are deeply rooted in the cultural fabric of each district.

- The ODOP initiative aims to preserve and promote these traditional arts, crafts, and industries, which **often face challenges due to globalization and changing consumer preferences.**

- **Market Linkages and Branding:** ODOP focuses on providing market linkages and creating a robust marketing ecosystem for local products.

- By leveraging the unique characteristics of each district's product, the initiative helps in creating **niche markets, attracting buyers, and increasing exports, thereby boosting the local economy.**

➤ **One District One Product Awards:**

- Recognizing the efforts of various stakeholders in promoting economic development and realising the vision of **Atmanirbhar Bharat**, **DPIIT has instituted the One District One Product Awards**.
 - These awards will acknowledge the outstanding work done by States/UTs, Districts, and Indian Missions Abroad.
- The awards will be launched on the **Rashtriya Puraskar Portal**.

What is PM Gati Shakti?

➤ **About:**

- **PM Gati Shakti is a National Master Plan for Multi-modal Connectivity**, a digital platform to bring **16 Ministries, including Railways, Civil Aviation, MEITY, Shipping, and Road Transport, together** for integrated planning and coordinated implementation of infrastructure connectivity projects.

➤ **Features:**

- The plan **incorporate the infrastructure schemes of various Ministries and State Governments like Bharatmala, Sagarmala, inland waterways, dry/land ports, UDAN etc.** and **cover economic zones like textile clusters, pharmaceutical clusters, defence corridors, electronic parks, industrial corridors, fishing clusters, agri zones etc.** to improve connectivity and make Indian businesses more competitive.

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- The plan also **leverage technology extensively including spatial planning tools with ISRO imagery developed by BiSAG-N (Bhaskaracharya National Institute for Space Applications and Geoinformatics)** and enable transparency in monitoring current projects.

Licensing and Regulation of Submarine Cable Landing in India

Why in News?

The Department of Telecom (DoT) raised concerns about **Indian International Long-Distance Operators (ILDOS)** without any stake in submarine cable systems seeking clearances for laying and maintaining submarine cables in India.

- In this context, the **Telecom Regulatory Authority of India (TRAI)** has released recommendations on the “**Licensing Framework and Regulatory Mechanism for Submarine Cable Landing in India**”.

What are the Recommendations of TRAI?

- **Two Categories of CLS:**
 - Amending the **ILD/ISP-A (international long distance/ Internet service provider Category A)** permits to include two categories of Cable Landing Station (CLS) locations — **Main CLS and CLS “point of presence”**.
 - Main CLS facility be mandated to **seek all approvals for an international submarine cable (SMC) landing** in India.
 - CLS ‘point of presence’ needs to **allow lawful interception and meet the requisite security drill**.
- **Critical and Essential Service:**
 - The submarine cable operations should be **recognized as critical and essential services** due to their crucial role in maintaining **seamless national and international communication networks**.
 - Submarine cable operations should have the highest level of importance for obtaining necessary permissions and security clearances.
- **Proposed Legislative Amendment:**
 - Addition of a **section on “Submarine cable” and “Cable Landing Station”** in the **Indian Telecommunication Bill, 2022**.

- It will **provide legal and regulatory support**, contributing to the growth and robustness of the digital communications sector.

➤ Custom Duty and GST Exemptions:

- TRAI proposes **exemption from custom duty and GST** for goods and items required for CLS, submarine cable operation, and maintenance.
- This will address critical challenges in the sector, particularly related to cable repair and maintenance.

What is the Significance of the Recommendations?

➤ Strengthening Data Flow:

- TRAI’s recommendations have the **potential to unlock the full potential of cross-border data flow**, fuel innovation, and fortify India’s position as a data powerhouse.

➤ Reduced Reliance on Foreign Providers:

- The requirement for Indian entity-owned vessels for **undersea cable maintenance will reduce delays** and decrease reliance on foreign providers for repairing subsea cables.

What is a Submarine Communications Cable?

➤ About:

- It is a cable **laid on the seabed between land-based stations** to transmit telecommunication signals across stretches of ocean and sea.
- Modern submarine **cables use fiber-optic technology**. The optical fibre elements are **typically coated with plastic layers and contained in a protective tube** suitable for the environment where the cable will be deployed.

➤ Significance:

- Compared to satellites, **using internet connection through submarine cables** is more reliable, cost efficient and of larger capacity.

➤ Examples:

- **MIST Submarine Cable System** (connecting India with Myanmar, Thailand, Malaysia and Singapore)
- **Reliance Jio Infocomm’s India Asia Xpress (IAX)** (India to the Maldives, Singapore, Sri Lanka and Thailand)
- **India Europe Xpress (IEX)** (India to Italy via Saudi and Greece)

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- **SeaMeWe-6 project** (Singapore to France via India, Bangladesh, Maldives)
- **Africa2 Cable** (India with the UK via several African countries)

Coal India and CCI

Why in News?

The **Supreme Court of India** has recently dismissed **Coal India Ltd (CIL)**'s appeal, which affirmed the **Competition Commission of India (CCI)**'s authority to examine CIL's conduct under the **Competition Act, 2002**.

- The court found **no merit in excluding CIL from the purview of the Competition Act**, which was earlier accused of engaging in abusive practices.

What is the Case About?

- **About:**
 - In 2017, the CCI imposed a penalty of Rs. 591 crores on CIL for imposing unfair and discriminatory conditions in **fuel supply agreements (FSAs)** with power producers.
 - The company was found to be **supplying lower quality coal** at higher prices and **placing opaque conditions in the contract** regarding supply parameters and quality.
 - The CCI argued that Coal India and its subsidiaries operated independent of market forces and enjoyed **market dominance in the production and supply of non-coking coal in India**.

Note:

- **Coal India Ltd (CIL)** is a public sector undertaking that is the **largest coal producer and supplier** in India.
- It operates under the **Coal Mines (Nationalisation) Act, of 1973**, which gives it a monopoly over coal mining and distribution in the country.
- CIL was a fully government-owned entity until its **disinvestment** in 2010. Currently, the government holds a majority shareholding with a share percentage of 67%.
- **Arguments of CIL and CCI:**
 - **CIL's Stance:**
 - **Principles of "Common Good":**
 - CIL operates based on the principles of promoting the **"common good"** and ensuring

equitable distribution of coal, a vital natural resource.

- **Monopoly Status:**

- CIL refers to the **Nationalization Act of 1973** to assert its position as a **"monopoly"** established for **efficient coal production and distribution**.

- **Differential Pricing:**

- CIL implements **differential pricing to incentivise captive coal production**, aiming to sustain the larger operating ecosystem and pursue welfare objectives.

- **Implications for National Policies:**

- CIL's coal supply supports national policies, such as promoting growth in economically disadvantaged regions through increased allocation.

- **CCI's Stance:**

- **Raghavan Committee Report (2020):**

- The CCI referred to the **Raghavan Committee report (2020)**, which concluded that **state monopolies like CIL are not in the best interests of the nation** and should not operate without competition.
- This **highlights the need to promote competition** and accountability in the market.

- **Non-Essential Commodity Classification:**

- The CCI emphasized that **coal is no longer classified as an "essential commodity" since 2007**.
 - ◆ The Nationalisation Act too was removed from the **Ninth Schedule** (laws that cannot be challenged in court) in 2017.
- This indicates that coal is **subject to market dynamics** and should not be exempted from the **Competition Act, 2002**.

- **Impact on Consumers:**

- The CCI highlighted the significant **impact of irregular prices and supply of coal on power generation companies**, which indirectly affects consumers.
- Unfair pricing or supply practices by CIL would directly impact consumers' interests.

- **Government Ownership and Supply Allocation:**

- CIL's significant coal supplies to power companies connect coal supply to the welfare of the nation.

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- The CCI argued that **ensuring continuous coal supply, adherence to contracts**, reasonable pricing, and quality **serve the common good**.

➤ **Ruling of the Supreme Court:**

- The SC dismissed CIL's argument for **exemption based on the Nationalization Act of 1973**, ruled that it cannot be exempted from the Competition Act.
- The court emphasized the need for **fair competition and equality among entities**, regardless of their sector and reinforced the **principle of "competitive neutrality"** and the need for a level playing field.
- It highlights the importance of competition in fostering a vibrant and efficient economy.

What is the Coal Mines (Nationalisation) Act, of 1973?

- The Coal Mines (Nationalisation) Act, of 1973, was enacted by the Indian Parliament to **ensure rational, coordinated, and scientific development of coal resources**.
 - Under this act, coal mining was exclusively reserved for the public sector.
- **Exceptions were introduced in 1976** for captive mining by private companies in iron and steel production and sub-leasing in isolated small pockets.
- In **1993, amendments allowed private sector participation in captive coal mining** for power generation, coal washing, and other notified end uses.
 - Allotment of coal mines for captive use was based on recommendations from a high-powered committee.
 - Mining of coal for captive use in cement production was permitted by government notification.
- The **Act established government control over coal mining in India**, with limited provisions for private sector involvement in specific sectors and purposes.

What is CCI?

- **About:**
 - **Statutory body** responsible for enforcing the **Competition Act, 2002**.
 - Established in March 2009, replacing the **Monopolies and Restrictive Trade Practices Act, of 1969**.
 - **Quasi-judicial body** giving opinions and dealing with cases.
- **Composition:**

- **One Chairperson and six members** appointed by the Central Government.

➤ **Competition Act, 2002:**

- The Competition Act, initially passed in 2002 and later amended by the **Competition (Amendment) Act of 2007**, has been further modified by the **Competition Amendment Act of 2023**.
 - This latest amendment aims to regulate **mergers and acquisitions** based on **transaction value**, establish a framework for quicker resolution of investigations through settlement and commitment, and **decriminalize specific offenses under the Act**.
- Prohibits **anti-competitive agreements and abuse of dominant position**.
- Regulates combinations causing an adverse effect on competition within India.
- In accordance with the provisions of the Amendment Act, the **Competition Commission of India** and the **Competition Appellate Tribunal (COMPAT)** have been established.
- The government replaced the COMPAT with the **National Company Law Appellate Tribunal (NCLAT)** in 2017.
- **Functions and Role of CCI:**
 - **Eliminating practices with adverse effects on competition** and protecting consumer interests.
 - Giving **opinions on competition issues** referred by statutory authorities.
 - Undertaking **competition advocacy, creating public awareness, and providing training on competition issues**.
 - Ensuring **consumer welfare** and fair competition for economic growth and development.
 - **Implementing competition policies** for efficient utilization of economic resources.

What are the other Judgements Related to Market Monopoly in India?

- **Competition Commission of India v. Steel Authority of India Ltd (SAIL) (2010):**
 - The SC upheld the CCI's order to investigate SAIL for anti-competitive practices in supplying rails to Indian Railways.
 - SC ruled that SAIL was not exempt from the Competition Act and that its order was not appealable at the initial stage.

Note:



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- The Court also said that the CCI was a necessary or proper party in any appeal before the COMPAT.
- **Competition Commission of India v. Google LLC & Ors (2021):**
 - CCI appealed against Karnataka HC's order, investigating alleged anti-competitive practices by Google in India's smart TV and Android app store markets.
 - The HC quashed CCI's order due to lack of jurisdiction and the absence of Google's opportunity to present its case.
 - The SC stayed CCI's investigation and issued notices to all parties involved.

Star Rating Registration Process for Coal Mines

Why in News?

Recently, the Ministry of Coal announced the commencement of the **Star Rating Registration process** of **Coal and Lignite Mines** for the financial year 2022-23.

What is the Process of Registration?

- **Parameters:**
 - The Star Rating policy **aims to evaluate mines based on various factors** across **seven key parameters** namely,
 - Mining Operations
 - Environment-related parameters
 - Adoption of Technologies
 - Best Mining Practices
 - Economic performance
 - Rehabilitation & Resettlement
 - Worker-related Compliance and Safety & security.
- **Process:**
 - Participating mines will **undergo a self-evaluation process**, and the top 10% performing mines will be further validated through inspections conducted by a committee.
 - While the remaining **90% of the mines will undergo an online review process**, all participants can contribute to the evaluation by reviewing other mines.

- The evaluation will be conducted by the **Coal Controller's Organization**.
- The ratings awarded range **from Five Star to NO Star**, comprehensively evaluating each mine's achievements.
- **Aim:**
 - It aims to **foster competitiveness among mines** and recognize their outstanding performance **based on compliance of statutory provisions**, adoption of advanced mining technology and economic achievements.

What is Coal?

- **About:**
 - It is a **type of fossil fuel** found in the **form of sedimentary rocks** and is often known as '**Black Gold**'.
 - It is a **conventional source of energy** and is widely available. It is used as a domestic fuel, in industries such as iron and steel, steam engines and to generate electricity. Electricity from coal is called thermal power.
 - The leading coal producers of the world **include China, US, Australia, Indonesia, India**.
 - Indian coal **has high ash content**, which varies from 35 to 45%, compared with that of coal in other parts of the world, which is around 15% while it has low sulphur content, about 0.5%.
- **Distribution of Coal in India:**
 - **Gondwana Coal Fields (250 million years old):**
 - Gondwana coal makes up to **98% of the total reserves** and 99% of the production of coal in India.
 - Gondwana coal forms India's metallurgical grade as well as **superior quality coal**.
 - It is found in Damodar (Jharkhand-West Bengal), Mahanadi (Chhattisgarh-Odisha), Godavari (Maharashtra), and Narmada valleys.
 - **Tertiary Coal Fields (15 – 60 million years old):**
 - Carbon content is very low but is rich in moisture and Sulphur.
 - Tertiary coalfields are mainly confined to extra-peninsular regions
 - Important areas include **Assam, Meghalaya, Nagaland, Arunachal Pradesh, Jammu and Kashmir, Himalayan foothills of Darjeeling in West Bengal, Rajasthan, Uttar Pradesh, and Kerala**.

Note:



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➤ **Classification:**

- **Anthracite** (80 - 95% carbon content, found in small quantities in J&K).
- **Bituminous** (60 - 80% carbon content and is found in Jharkhand, West Bengal, Odisha, Chhattisgarh and Madhya Pradesh).
- **Lignite** (40 to 55% carbon content, high moisture content and is found in Rajasthan, Lakhimpur (Assam) and Tamil Nadu).
- **Peat** (less than 40% carbon content and it is in the first stage of transformation from organic matter (wood) to coal).

Flaws In NIRF Ranking

Why in News?

The **National Institution Ranking Framework (NIRF)**, established by the Ministry of Education, recently announced its national rankings for universities which have been found flawed by various experts.

How does the NIRF Rank Institutes and What are the Issues with the Ranking?

- The NIRF releases rankings across various categories: 'Overall', 'Research Institutions', 'Universities', and 'Colleges', and **specific disciplines** like engineering, management, pharmacy, law, etc.
- NIRF ranks institutes by their total score; it uses **five indicators** to determine this score:
 - Teaching, Learning & Resources (30% weightage)
 - Research and Professional Practice (30%)
 - Graduation Outcomes (20%)
 - Outreach and Inclusivity (10%)
 - Perception (10%)
- **Issues with NIRF Ranking:**
 - Academic communities are worried about how the indicators are made and the methods used. The evaluation **focuses on research and professional practices, with attention to bibliometric measures** sidelining other forms of intellectual contributions, such as books, book chapters, monographs, non-traditional outputs like popular articles, workshop reports, and other forms of grey literature.
 - They have argued that bibliometric indicators don't fully capture the intricacies of scientific

performance, and that a more comprehensive evaluation methodology is needed.

- The allure of bibliometrics as a tool for assessing research output lies in its efficiency and convenience compared to qualitative assessments performed by subject experts, which are more resource-intensive and time consuming.

Note:

- Bibliometrics refers to the measurable aspects of research, such as the number of papers published, the number of times they're cited, the impact factors of journals, etc.

What are the Repercussions of Flawed rankings?

- **Misleading prospective students and parents** about the quality and reputation of institutions.
- Creating **unfair competition** and incentives among institutions to game the system.
- **Undermining the credibility** and usefulness of the ranking framework.
- **Neglecting other aspects of institutional excellence**, such as innovation, diversity, social impact, etc.
- May **negatively affect the perception**, reputation, and competitiveness of **foreign educational institutions** if they set up their campuses in India.

How can NIRF Ranking be Improved?

- **Nurturing faculty research output** by providing adequate resources, incentives, and recognition.
- **Bibliometrics should not be used as the sole criteria** for any evaluative purpose. They should always be combined with other forms of evaluation, such as peer review, to make informed decisions.
- Creating an **institutional repository** to showcase and disseminate the research publications and impact.
- Improving the teaching-learning process by **creating an outcome-based curriculum**, using innovative pedagogies, and ensuring student feedback and satisfaction.
- Enhancing the graduation outcomes by improving the placement, entrepreneurship, and higher education opportunities for students.
- **Promoting outreach and inclusivity** by increasing the diversity of students, faculty, and staff, and engaging with the local and global communities.

Note:



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- **NIRF Rankings ought to be transparent** about what data they collect, how they collect it, and how that data becomes the basis for the total score.

Addition of More Castes to Central OBC List

Why in News?

National Commission for Backward Classes (NCBC) is processing the request for the **approval of about 80 more castes in six States**, (Maharashtra, Telangana, Andhra Pradesh, Himachal Pradesh, Punjab, and Haryana) for inclusion in the OBC list.

What is Other Backward Class (OBC)?

- **About:**
 - The term OBC includes all classes of citizens who are socially and educationally backward.
 - Supreme Court concluded that in order to identify OBCs, the principle of exclusion of creamy layer should be applied.
 - A creamy layer can be defined as those classes of people within the OBC category who are no longer backward and are socially and economically at par with other forward classes of the country.
- **Process of Inclusion:**
 - NCBC is a constitutional **body that examines requests** for inclusion of castes in Central OBC list.
 - NCBC **constitutes a Bench to examine proposals** and forwards its decision to the Union government.
 - Cabinet approves the additions and brings legislation, President notifies the change. Cabinet approves the additions and brings legislation, President notifies the change.
- **Constitutional Provisions:**
 - **Under Article 15(4)** of the Constitution, **the State has the power to make special provisions** for the advancement of **any socially and educationally backward class i.e., the OBC.**
 - The term “special provision for advancement” includes several aspects like reservation of seats in educational institutions, financial assistance, scholarships, free housing etc.
 - **Under Article 16(4)**, the state is empowered to enact laws **for the reservation of appointments or posts in favour of OBCs.**

Union Government's Achievements:

- Added **16 communities to Central OBC list in Himachal Pradesh, Bihar, Jharkhand, Madhya Pradesh and Jammu and Kashmir** since 2014
- Brought 105th Amendment to Constitution to re-affirm States' right to maintain their own OBC lists, saving 671 State OBC communities from losing benefits

What is NCBC?

➤ About:

- **102nd Constitution Amendment Act, 2018** provides constitutional status to the NCBC.
- It has the **authority to examine complaints and welfare measures regarding socially and educationally backward classes.**
- Previously NCBC was a **statutory body under the Ministry of Social Justice and Empowerment.**

➤ Background:

- Two Backward Class Commissions were appointed in 1950s and 1970s under **Kaka Kalelkar and B.P. Mandal respectively.**
 - Kaka Kalelkar commission is also known as the **First Backward Classes Commission.**
- In **Indra Sawhney case of 1992**, Supreme Court had directed the government to create a permanent body to entertain, examine and recommend the inclusion and exclusion of various Backward Classes for the purpose of benefits and protection.
- In pursuant to these directions' parliament passed the National Commission for Backward Classes Act in 1993 and constituted the NCBC.
- **123rd Constitution Amendment bill of 2017** was introduced in Parliament to safeguard the interests of backward classes more effectively.
- Parliament has also passed a separate bill to repeal the National Commission for Backward Classes Act, 1993, thus 1993 act became irrelevant after passing the bill.
- The bill got the President assent in August 2018 and provided the constitutional status to NCBC.

➤ Structure

- The Commission consists of **five members** including a **Chairperson, Vice-Chairperson and three other Members appointed by the President** by warrant under his hand and seal.
- The conditions of **service and tenure of office of the Chairperson, Vice-Chairperson and other Members is determined by President.**

Note:



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GoI-UNSDCF 2023-2027

Why in News?

Recently, **NITI Aayog** and the **United Nations** in India signed the **Government of India - United Nations Sustainable Development Cooperation Framework (GoI-UNSDCF) 2023-2027**.

- The **United Nations General Assembly** designates this framework as the principal planning and implementation instrument for the UN Development System at country level.
- The framework aligns with India's national vision for development and aims to achieve the **Sustainable Development Goals (SDGs)**, emphasizing gender equality, youth empowerment, and human rights.

What are the Key Points of the Framework?

- **Strategic Pillars and Outcome Areas:**
 - The GoI-UNSDCF 2023-2027 is built upon Four Strategic pillars derived from the **2030 Agenda**:
 - People, Prosperity, Planet, and Participation.
 - The four pillars encompass **Six Outcome Areas**:
 - Health and Wellbeing
 - Nutrition and **Food Security**
 - Quality Education
 - Economic Growth and Decent Work
 - Environment, Climate, **WASH (Water, Sanitation, and Hygiene)**, and Resilience
 - Empowering People, Communities, and Institutions.
- **Focus:**
 - The GoI-UNSDCF places **specific emphasis on SDG localisation** and **South-South Cooperation**,



Note:

aligning with India's leadership in implementing and accelerating the SDGs.

- SDG localization is the process of transforming the SDGs into reality at the **local level, in line with national frameworks** and with communities' priorities.
- India aims to **showcase its development models globally** and actively promotes South-South cooperation.
- **Implementation and Monitoring:**
 - The implementation, monitoring, and reporting of the GoI-UNSDCF 2023-2027 will be jointly led by the **Government of India and the United Nations**, India through a Joint Steering Committee.

What are Sustainable Development Goals?

- The **Sustainable Development Goals (SDGs)**, also known as the Global Goals, were adopted by the **United Nations in 2015** as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.
 - It is a set of **17 SDGs that recognize that action in one area** will affect outcomes in others and that development must balance social, economic, and environmental sustainability.
 - Countries have committed to prioritizing progress for those who are furthest behind.
 - The SDGs are designed to **end poverty, hunger, AIDS**, and discrimination against women.
 - India in recent years has made significant efforts in achieving Goal 13th of the SDGs in particular.
 - The goal calls for taking urgent action to combat climate change and its impacts.

Alarming Rise of Non-Communicable Diseases in India

Why in News?

A recent study conducted by the **Madras Diabetes Research Foundation** in collaboration with the **Indian Council of Medical Research (ICMR)** and the **Ministry of Health and Family Welfare** has shed light on the growing burden of **non-communicable diseases (NCDs)** in India.

- The study marks the first comprehensive epidemiological research paper to include **participants from 31 states and Union Territories**. By including data from a wide range of regions, the study provides valuable insights into the prevalence and impact of NCDs, such as **diabetes**, in the country.

What Were the Key Findings of the Study?

- **Findings:**
 - **Goa, Puducherry, and Kerala** have the **highest** prevalence of diabetes, with rates approaching 25-26.4%.
 - **Diabetes:** India now has 101 million individuals with diabetes.
 - **Prediabetes:** The study identified 136 million people with **prediabetes**.
 - **High blood pressure:** 315 million individuals were found to have **hypertension**.
 - **Obesity:** 254 million people were classified as generally obese, while 351 million had abdominal obesity.
 - **Hypercholesterolemia:** 213 million individuals had **fat accumulation in arteries, increasing the risk of heart attacks and strokes**.
 - **High LDL Cholesterol:** 185 million individuals had elevated levels of **low-density lipoprotein (LDL) cholesterol**.
 - LDL is the **"bad cholesterol"** because **too much of it in blood** can contribute to **plaque buildup in the arteries**.
 - Cholesterol travels through the blood **on proteins called "lipoproteins"**.
- **Significance of the Study:**
 - The study encompasses a large sample size of 1,13,043 individuals from diverse regions.
 - It reveals that diabetes and other metabolic NCDs are **more prevalent in India than previously estimated**.
 - While **urban areas currently have higher rates of metabolic NCDs, except for prediabetes**, rural regions are expected to experience a surge in diabetes cases in the next five years if left unregulated.
 - Interstate and inter-regional variations highlight the **need for state-specific policies and interventions**.

Note:



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Urban vs rural

Non-communicable diseases (NCDs)	National prevalence	Estimated number of people in India, in millions (Burden)	State with highest prevalence	State with lowest prevalence
Diabetes	11.4%	101.3	Goa (26.4%)	Uttar Pradesh (4.8%)
Pre-diabetes	15.3%	136.0	Sikkim (31.3%)	Mizoram (6.8%)
Hypertension	35.5%	315.5	Punjab (51.8%)	Meghalaya (24.3%)
Generalized Obesity	28.6%	254.2	Puducherry (53.3%)	Jharkhand (11.6%)
Abdominal Obesity	39.5%	351.1	Puducherry (61.2%)	Jharkhand (18.4%)
Hypercholesterolemia	24.0%	213.3	Kerala (50.3%)	Jharkhand (4.6%)
High LDL cholesterol	20.9%	185.7	Kerala (52.1%)	Jharkhand (3.2%)

Urban vs rural difference: Urban regions had higher rates of all metabolic NCDs than rural areas, with the exception of pre-diabetes.

New National estimates for diabetes and other NCD's: Our study estimates that in 2021, in India there are 101 million people with diabetes and 136 million people with prediabetes, 315 million people had high blood pressure, 254 million had generalized obesity, and 351 million had abdominal obesity. Additionally, 213 million people had hypercholesterolaemia and 185 million had high LDL cholesterol.

➤ Impact of Study on India:

- The study serves as an **early warning for the population's increased vulnerability to NCDs** and life-altering medical conditions, including strokes.
- India faces the dual challenge of **malnutrition and obesity**, with exposure to **fast food, sedentary lifestyles, lack of sleep, exercise, and stress** contributing to NCD prevalence.

➤ Impact on Quality of Life and Life Expectancy:

- NCDs, such as diabetes, **cardiovascular** diseases, cancers, and chronic respiratory diseases, contribute to the **overall disease burden in the country**.

- NCDs often result in **disabilities, reducing individuals' functional abilities** and impairing their daily activities.
- The management of NCDs requires long-term medical care, medications, and **lifestyle modifications**, which can be challenging for individuals and their families.
- NCDs can lead to **increased healthcare expenses**, impacting the **financial well-being of individuals and households**.
- The burden of NCDs can hinder **individuals' productivity and socioeconomic development**, affecting their employment opportunities and economic growth.

Note:

- NCDs can significantly **reduce life expectancy** if **not properly managed** and controlled.

What are Initiatives Related to NCDs?

➤ Indian:

- **National Programme for Prevention & Control of Non-Communicable Diseases (NP-NCD)**, previously known as **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)** is being implemented under the **National Health Mission (NHM)**.
- The Central Government is implementing the Strengthening of Tertiary Care Cancer facilities scheme to support the setting up of **State Cancer Institutes (SCI)** and **Tertiary Care Centres (TCCC)** in different parts of the country.
- Oncology in its various aspects has a focus in case of new AIIMS and many upgraded institutions under **Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)**.
- **Affordable Medicines and Reliable Implants for Treatment (AMRIT)** Deendayal outlets have been opened at 159 Institutions/Hospitals with an objective to **make available Cancer and Cardiovascular Diseases drugs and implants at discounted prices to the patients**.
- **Jan Aushadhi stores** are set up by the Department of Pharmaceuticals to provide generic medicines at affordable prices.

➤ Global:

- **Agenda for Sustainable Development:** As part of the 2030 Agenda for Sustainable Development, **heads of state and government committed to develop ambitious national responses, by 2030**, to reduce by one third premature mortality from NCDs through prevention and treatment (SDG target 3.4).
 - **WHO** plays a key leadership role in the coordination and promotion of the global fight against NCDs.
- **Global Action Plan:** In 2019, the **World Health Assembly** extended the WHO Global action plan for the **prevention and control of NCDs 2013–2020 to 2030** and called for the **development of an Implementation Roadmap 2023 to 2030 to accelerate progress on preventing and controlling NCDs**.

- It supports actions to achieve a set of nine global targets with the greatest impact towards prevention and management of NCDs.

Subsidies and Climate Change

Why in News?

A new **World Bank** report highlights the negative consequences of **inefficiently subsidizing agriculture, fishing, and fossil fuel sectors**, both implicitly and explicitly, by spending trillions of dollars, exacerbating **climate change**.

- In total, the report calculated that subsidy in the three areas exceeded **USD 7 trillion**, equivalent to **8% of the global gross domestic product**.

What are the Major Highlights of the Report?

➤ Fossil Fuel Subsidies and Climate Change:

- The report acknowledges the **limited effectiveness of reducing incentives for polluting fuels**, as energy demand is not highly responsive to price changes.
- In 2021, countries spent **USD 577 billion on subsidies** aimed at **lowering the prices of polluting fuels like oil, gas, and coal**.
 - These measures **incentivize the overuse of fossil fuels and contribute to air pollution**, particularly in industrializing middle-income countries with a high health burden.
- The report highlights the **disproportionate allocation of funds, as most countries spend six times more on subsidizing fossil fuel consumption** than on commitments made under the 2015 Paris Agreement.

➤ Inefficient Agricultural Subsidies:

- **Explicit subsidies** in the agricultural sector amount to approximately **USD 635 billion annually in countries with accessible data**, while global estimates exceed USD 1 trillion.
 - These subsidies target farmers for purchasing specific inputs or cultivating particular crops.
- Research published in the report indicates that **subsidies tend to favor wealthier farmers**, even when programs are designed to target the poor.
- **Inefficient subsidy usage has resulted in up to 17% of all nitrogen pollution in water over the past**

Note:



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30 years, leading to health impacts and reducing labor productivity by up to 3.5%.

➤ **Damaging Subsidies in the Fisheries Sector:**

- The fisheries sector receives an estimated **USD 35.4 billion per year** in subsidies, of which approximately **USD 22.2 billion contributes to overfishing**.
 - Subsidies play a significant role in driving excess fishing capacity, depleting fish stocks, and reducing fishing rents.
- When fisheries are not managed sustainably and already severely depleted, the negative impacts of subsidies are even more pronounced.
 - **Repurposing subsidies without incentivizing increased fishing capacity** is crucial for safeguarding remaining fish stocks.

What are the Positive Impacts of Subsidies?

➤ **Agriculture:**

- **Income Support:** Subsidies can provide income support to farmers, helping them **cope with price fluctuations, market uncertainties, and production risks**.
 - For instance, the **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** scheme launched in 2019 provides direct income support to small and marginal farmers.
- **Increased Production:** Subsidies on inputs like **fertilizers, seeds, and irrigation** can promote increased agricultural production.
 - The Indian government's support for fertilizers through the **Nutrient-Based Subsidy (NBS)** scheme ensures the availability of fertilizers at affordable prices to farmers.

➤ **Fishery:**

- **Modernization and Infrastructure Development:** Subsidies in the fishery sector can aid in the modernization of fishing practices and the development of infrastructure.
 - This can lead to increased productivity, improved safety measures, and better storage facilities.
 - The **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** aims to enhance fish production and fishermen's welfare through various interventions, including infrastructure development.
- **Livelihood Support:** Subsidies can provide livelihood support to fishermen, especially during lean seasons and adverse climatic conditions.

- Schemes like the **National Scheme of Welfare of Fishermen** provide assistance to fishermen for the construction and repair of boats, supply of safety equipment, and training programs.

➤ **Fossil Fuel:**

- **Energy Access and Affordability:** Subsidies on fossil fuels, **such as LPG (liquefied petroleum gas) and kerosene**, can ensure energy access and affordability for vulnerable sections of society.
 - The Indian government launched the **Pradhan Mantri Ujjwala Yojana (PMUY)** to increase LPG usage and reduce air pollution, deforestation, and health disorders

What are the Challenges Related to Subsidies?

- **Fiscal Burden:** Subsidies often impose a significant fiscal burden on the government.
 - The cost of subsidies can **strain the government's finances and impact its ability to allocate resources** to other critical sectors such as healthcare, education, and infrastructure development.
 - Balancing the need for subsidies with fiscal sustainability is a constant challenge.
- **Inefficient Targeting:** One of the major challenges is ensuring that subsidies reach the intended beneficiaries effectively.
 - There is a **risk of subsidies being misdirected or captured by ineligible individuals or entities**.
 - **Proper identification and targeting mechanisms** are essential to avoid leakages and ensure that subsidies benefit the intended recipients.
- **Market Distortions:** Subsidies can **distort market dynamics and create inefficiencies**. They may lead to **overproduction or overconsumption of certain commodities**, leading to market imbalances and price distortions.
 - These distortions can affect the competitiveness of the sector and hinder the development of a sustainable and market-oriented agricultural, fishery, or energy sector.
- **Environmental Implications:** Subsidies on fossil fuels can **discourage the transition to cleaner and more sustainable energy sources**.
 - They can **perpetuate the reliance on fossil fuels, contributing to environmental degradation, air pollution, and climate change**.

Note:

VAIBHAV Scheme

Why in News?

The **Government of India** has introduced a new fellowship programme called **Vaishvik Bhartiya Vaigyanik (VAIBHAV)** to facilitate collaboration between the **Indian diaspora in Science, Technology, Engineering, Mathematics and Medicine (STEMM)** and Indian academic and research institutions.

- VAIBHAV Summit was also organised as an event dedicated to **connecting the Indian STEMM diaspora with Indian institutions**.

What is the VAIBHAV Fellowship Scheme?

- **About:**
 - The **VAIBHAV Fellowship** aims at improving the research ecosystem of **India's Higher Educational and Scientific Institutions** by facilitating academic and research collaborations between Indian Institutions and the best institutions in the world through mobility of faculty/researchers from overseas institutions to India.
 - It is **implemented by the Department of Science and Technology (DST)**, Ministry of Science and Technology.
- **Key Features of the VAIBHAV Fellowship Programme:**
 - **Knowledge Verticals:** The programme will focus on **18 identified knowledge verticals**, including quantum technology, health, pharmaceuticals, electronics, agriculture, energy, computer sciences, and material sciences, among others.
 - **Eligibility:** The fellowship is open to outstanding scientists and technologists of **Indian origin (Non-resident Indians (NRI)/ Persons of Indian Origin (PIO)/Overseas Citizen of India (OCI)** who are actively engaged in research activities in their respective countries.
 - **Collaboration Duration:** Selected fellows will have the opportunity to work in collaboration with **Indian Higher Educational Institutions (HEIs)**, universities, and public-funded scientific institutions.
 - They may spend up to two months per year, for a maximum of three years, at an Indian institution of their choice.
 - **Fellowship Grant:** VAIBHAV fellows will receive a monthly fellowship grant of INR 4,00,000, which

will support their research activities during the collaboration period.

- **Travel, Accommodation, and Contingencies:** The fellowship will cover international and domestic travel expenses, accommodation, and contingencies, ensuring a conducive research environment for the fellows.

What are the Other Government Initiatives involving Overseas Indians?

- **Pravasi Bharatiya Divas (PBD)** is celebrated on 9th January every year to mark the contribution of the Overseas Indian community in the development of India.
- **Know India Program (KIP)** is a flagship initiative of the Ministry of External Affairs (MEA) for diaspora engagement which familiarises Indian-origin youth (18-30 years) with their Indian roots and contemporary India.
- **VAJRA (Visiting Advanced Joint Research) Faculty Scheme of the Department of S&T** enables NRIs and overseas scientific communities to participate and contribute to research and development in India.

Central Bureau of Investigation

Why in News?

Recently, the Tamil Nadu government has announced that it has withdrawn the general consent given to the **Central Bureau of Investigation (CBI)**, under Section 6 of the **Delhi Special Police Establishment (DSPE) Act, 1946**.

- Mizoram, West Bengal, Chhattisgarh, Rajasthan, Maharashtra, Kerala, Jharkhand, Punjab and Meghalaya had withdrawn their general consent given to CBI as of March. 2023.

What is the CBI?

- The CBI was **established by a resolution of the Ministry of Home Affairs and later transferred to the Ministry of Personnel, Public Grievances and Pensions**, currently functioning as an **attached office**.
- Its establishment was **recommended by the Santhanam Committee** on Prevention of Corruption.

Note:



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- The CBI operates **under the DSPE Act, 1946**. It is **neither a constitutional nor a statutory body**.
- It investigates **cases related to bribery, governmental corruption, breaches of central laws, multi-state organized crime, and multi-agency or international cases**.

How does the CBI function in India?

- **Provision of Prior Permission:**
 - The CBI is **required to obtain the prior approval of the Central Government before conducting any inquiry** or investigation into an offence committed by officers of the rank of joint secretary and above in the Central Government and its authorities.
 - However, in **2014, the Supreme Court held it invalid and held that Section 6A of the Delhi Special Police Establishment Act**, which granted protection to joint secretary and above officers from facing even a preliminary inquiry by the CBI in corruption cases, was **violative of Article 14**.
- **General Consent Principle for CBI:**
 - The consent of the **state government to CBI can be either case-specific or "general"**.
 - General consent is **normally given by states to help the CBI in the seamless investigation of cases of corruption** against central government employees in their states.
 - This is **essentially consent by default, which means CBI may begin investigations taking consent as having been already given**.
 - In the **absence of general consent, CBI would have to apply to the state government** for its consent in every individual case, and before taking even small actions.

What are the Challenges Before CBI?

- **Lack of Autonomy:**
 - One of the **major challenges is political interference** in its functioning.
- **Resource Constraint:**
 - The CBI also faces **a lack of infrastructure, sufficient manpower, and modern equipment**.
 - There have also been concerns about questionable methods of procuring evidence and officers failing to abide by the rule book.
- **Legal Limitations:**

- The agency currently **operates under outdated legislation that does not adequately address contemporary challenges**.
- It has resulted in **several issues, including ambiguity in its jurisdiction, lack of transparency, and inadequate accountability mechanisms**.
- **Procedural Delays:**
 - Legal procedures and lengthy court processes can pose challenges for the CBI.
 - Obtaining search **warrants, recording statements, and presenting evidence in court can be time-consuming**, leading to delays in completing investigations and securing convictions.

Why is There a Need for Institutional Reforms in the CBI?

- **Independence and Autonomy:**
 - Establishing the **CBI as an independent investigative agency separate** from the administrative control of the Central Government.
 - Ensuring functional autonomy to carry out investigations without undue interference from political or bureaucratic influences.
 - **Strengthening legal provisions** to safeguard the autonomy and impartiality of the CBI.
- **Jurisdiction and Coordination:**
 - **Clarifying its jurisdictional boundaries to avoid conflicts** with state police forces and ensuring smooth coordination and strengthening collaboration and information sharing with state agencies to streamline investigations.
- **Legal Framework:**
 - **Reviewing and updating existing laws** to enhance its **investigative powers, providing statutory backing** to investigative techniques, and streamlining legal procedures to expedite investigations and trials.
- **Technological Upgradation:**
 - Investing in **advanced technology and infrastructure** to equip the CBI with modern tools for digital forensics, data analysis, and crime mapping.

What are Some Supreme Court Observations on CBI?

- **Coalgate Case:**
 - In 2013, a Bench headed by Justice R M Lodha described the CBI as **"a caged parrot speaking in its master's voice"**

Note:

➤ CBI vs CBI Case:

- The SC, in this case, held that the power to remove/send on leave the director of CBI, **vested in the selection committee, not with the central government.**
- SC says this verdict **when CBI Director challenges the decision of the central government to send him on leave without his will.**

Ceiling on Stocks of Wheat and Pulses

Why in News?

Recently, the Ministry of Consumer Affairs, Food & Public Distribution has imposed **limits on Stock of Wheat** that can be held by traders, wholesalers, retailers, big chain retailers and processors to manage the overall **food security** and to **prevent hoarding and unscrupulous speculation.**

- The Ministry has also imposed stock limits on **Tur and Urad** by invoking the **Essential Commodities Act (ECA), 1955** due to same reasons.

Why are the Stock Limits being Imposed?

➤ Concerns over Wheat Production:

- Unseasonal rains, hailstorms, and higher temperatures in Feb 2023 raised **concerns about the overall wheat output.**
 - Lower production leads to higher prices, which may **surpass the government's purchase prices** and affect supply stability.
- There are indications of a **potential 20% decrease in wheat procurement** compared to initial estimate.
 - Approximately 5.23 lakh hectares of wheat crop were **estimated to be damaged in MP, Rajasthan** and UP due to hailstorms.
- The **India Meteorological Department** had warned of adverse effects on wheat crops **due to higher temperatures during the reproductive growth period.**

➤ Invoking ECA 1955 for Tur and Urad:

- Tur prices have risen **since mid-July 2022** amid slow progress in **Kharif sowing** as compared to 2021 due to **excess rainfalls and water logging conditions** in some parts of major Tur growing states of Karnataka, Maharashtra and MP.

- To control any unwarranted price rise, the government is taking **pre-emptive steps to ensure overall availability and controlled prices** of pulses in the domestic as well as overseas markets.

What are the Government Orders regarding Wheat Stock Limits?

➤ Imposition of Stock Limits to Stabilize Prices:

- The permissible stock limits are set at **3,000 metric tonnes for traders/wholesalers**, 10 metric tonnes at each outlet for retailers, and 3,000 metric tonnes at all depots (combined) for big chain retailers.
- Processors are allowed to **stock up to 75% of their annual installed capacity.**
- Entities are required to declare their stock positions regularly on the Department of Food and Public Distribution's portal.
- In case of stocks being held are higher than the limit, the **time limit is 30 days** from the day of issuing notification to bring the same under the prescribed limits.

➤ Offloading Wheat through OMSS:

- The government has decided to sell 15 lakh tonnes of wheat from the central pool through the **Open Market Sale Scheme (OMSS).**
- Wheat will be sold via e-auction to flour mills, private traders, bulk buyers, and manufacturers of wheat products.
- The sale will **be conducted in lot sizes of 10 to 100 metric tonnes**, with the possibility of releasing more batches based on prices and demand.
- A similar plan is being **considered for offloading rice** to moderate its prices.

What does the Government Seek from these Orders?

➤ Stabilize Prices:

- The primary aim is to stabilize wheat prices in the market. By imposing stock limits on various entities involved in the wheat supply chain, **the government aims to prevent hoarding and speculation**, ensuring a steady supply of wheat and **avoiding price volatility.**

➤ Ensure Affordability:

- By stabilizing prices, the government intends to **make wheat more affordable for consumers.**

Note:

- Controlling retail prices through the offloading of wheat from the central pool via the OMSS ensures that **wheat remains accessible to the public at reasonable rates**.
- **Prevent Supply Shortages and Maintain Food Security:**
 - By monitoring and managing the stock limits, the government **aims to ensure an adequate supply of wheat to meet the demand** and avoid any scarcity in the market and make wheat available to vulnerable sections of society via **Public Distribution System**.

What is the Essential Commodities Act 1955?

➤ **Background:**

- The ECA Act 1955 was legislated **at a time when the country was facing a scarcity of foodstuffs** due to persistent low levels of foodgrains production.
- The country was dependent on imports and assistance (such as wheat import from the US under PL-480) to feed the population.
 - India signed a **long-term Public Law (PL) 480 agreement** to get food aid under Government agricultural trade development assistance, with the US in 1954.
- To prevent hoarding and black **marketing of foodstuffs**, the Essential Commodities Act was enacted in 1955.

➤ **Objective:**

- The ECA 1955 is used to **curb inflation** by allowing the Centre to enable control by state governments of trade in a wide variety of commodities.

➤ **Essential Commodity:**

- There is no specific definition of essential commodities in ECA 1955. **Section 2(A) of the Act** states that an "essential commodity" means a commodity specified in the Schedule of the Act.

➤ **Centre's Role:**

- The Act gives powers to the central government to **add or remove a commodity in the Schedule**.
- The Centre, if it is satisfied that it is necessary to do so in the public interest, can notify an item as essential, in consultation with state governments.

➤ **Impact:**

- By declaring a commodity as essential, the government can control the production, supply, and distribution of that commodity, and impose a stock limit.



Note:

Economic Scenario

Highlights

- Uttar Pradesh's 7 Products Receive GI Tags
- Indian Startup Ecosystem
- India-US Deal for Semiconductor Unit
- Greedflation
- Animal Husbandry and Dairying
- Udyami Bharat-MSME Day 2023
- Manipur Invokes RBI's Riot Provisions
- Unprecedented Rise in Jeera Prices
- Remittance Inflow
- Impact of US Federal Reserve's Policy on Indian Markets
- India Infrastructure Project Development Fund
- CBIC Releases National Time Release Study (NTRS) 2023 Report
- Global Wind Day
- Sovereign Gold Bond Scheme 2023-24
- Adoption of E20 Fuel and Green Hydrogen Production

Uttar Pradesh's 7 Products Receive GI Tags

Why in News?

Uttar Pradesh, known for its **rich cultural heritage** and traditional crafts, has recently seen **seven of its distinctive products** being granted **Geographical Indication (GI)** tags by the Geographical Indications Registry in Chennai.

Which Seven Products from Uttar Pradesh have Received the GI Tag?

- **Amroha Dholak: A Musical Marvel**
 - The Amroha Dholak is a **musical instrument** crafted from **natural wood**.
 - Preferred wood choices include **mango, jackfruit, and teakwood**.
 - **Animal skin, usually goatskin**, is meticulously fitted to create the drum's surface.
- **Baghpat Home Furnishings:**
 - **Baghpat and Meerut** are renowned for their **exclusive handloom home furnishing products**.
 - The **weaving process** involves **cotton yarn** and is predominantly done on frame looms.
- **Barabanki Handloom Product:**
 - Barabanki and its surrounding areas are home to **around 50,000 weavers and 20,000 looms**.

- The annual turnover of the Barabanki cluster is estimated to be ₹150 crore.
- **Kalpi Handmade Paper:**
 - **Kalpi is recognized for handmade paper manufacturing.**
 - **Munnalal 'Khaddari'**, a Gandhian, introduced the craft in the 1940s, although its roots in Kalpi's history may extend further.

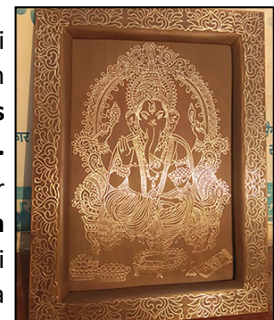
➤ Mahoba Gaura Patthar Hastashlip:

- Mahoba Gaura Patthar Hastashlip represents the unique stone craft of Mahoba.
- The **stone used, scientifically known as the 'Pyro Flight Stone'**, is a soft and radiant white-coloured stone predominantly found in the region.



Mainpuri Tarkashi:

- Mainpuri Tarkashi is a popular art form characterised by **brass wire inlay work on wood**.
- Traditionally used for **khadaous (wooden sandals)**, Mainpuri Tarkashi has been a household necessity.
 - Leather alternatives were sought due to cultural considerations regarding cleanliness.



Note:

➤ **Sambhal Horn Craft:**

- Sambhal Horn Craft utilises **raw materials procured from deceased animals** and this craft form is entirely handmade.

**What is a GI Tag?**➤ **About:**

- A **geographical indication (GI) tag** is a **name or sign used on certain products** that correspond to a specific geographical location or origin.
 - For example, **Darjeeling Tea, Kanchipuram Silk, etc.**
- The GI tag ensures that **only the authorised users or those residing in the geographical territory are allowed to use the popular product name.**
 - It also **protects the product from being copied or imitated by others.**
- A registered GI is valid for **10 years.**

➤ **Legal Framework and Obligations:**

- 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.
- It is governed and directed by the **WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).**
 - Furthermore, the significance of protecting industrial property and geographical indications as **integral components of intellectual property** is acknowledged and emphasised in **Articles 1(2) and 10 of the Paris Convention.**

Indian Startup Ecosystem

Why in News?

According to “slowdown in **India’s startup ecosystem**” report, new additions in the coveted **unicorn list declined sharply in 2023**, indicating a slowdown in the Indian startup ecosystem.

- India added only three unicorns’ startups having a valuation of over USD 1 billion in 2023 against 24 in the year-ago period, as per the ASK Private Wealth Hurun **Indian Future Unicorn Index 2023.**

What is the Scenario of the Startup Ecosystem in India?

- India has emerged as the **3rd largest ecosystem** for startups globally as of 31st May 2023. India ranks **2nd in innovation quality** with top positions in the quality of scientific publications and the quality of its universities among middle-income economies.
- Indian Startup Ecosystem has seen exponential growth in past few years (2015-2022):
 - 15X increase in the total funding of startups
 - 9X increase in the number of investors
 - 7X increase in the number of incubators
- As of May 2023, India is home to **108 Unicorns** with a **total valuation of USD 340.80 Bn.**
 - Out of the total number of unicorns, 44 unicorns were born in 2021 and 21 unicorns were born in 2022.

What are the Terms Related to Startups?

- **Decacorn:** a current valuation of over USD 10 billion.
- **Unicorns:** Start-ups founded after the year 2000 with a valuation of USD 1 billion.
- **Gazelles:** Start-ups that are most likely to go Unicorn in the next three years.
- **Cheetahs:** Start-ups that could go Unicorn in the next five years.

What are the Challenges Faced by Indian Startups?

- **Funding Challenges:**
 - Indian startups encounter **difficulties in securing adequate funding** for their ventures. Limited access to capital **inhibits their growth potential**

Note:

and hampers innovation. Startups face challenges in attracting investors and obtaining venture capital due to various factors such as risk aversion, uncertain market conditions, and lack of investor confidence.

➤ **Revenue Generation Struggles:**

- Many startups face challenges in **generating sustainable revenues**. They often struggle to **find viable business models**, monetize their products or services, and achieve profitability. Limited market reach, competition from established players, and insufficient customer acquisition pose additional hurdles.

➤ **Lack of Supportive Infrastructure:**

- The absence of a **robust infrastructure ecosystem can impede** the growth of startups.
- Challenges include inadequate physical infrastructure, limited access to technological resources, and a dearth of incubation centers, mentorship programs, and networking opportunities. **Startups require supportive environments to thrive** and access necessary resources, expertise, and guidance.

➤ **Regulatory Environment and Tax Structures:**

- Startups in India face **regulatory hurdles and complex tax structures**.
- Cumbersome compliance processes, **bureaucratic red tape**, and ambiguous regulations create obstacles for startups. Taxation complexities can add to the administrative burden and impact profitability.

What are Indian

Government's Initiatives for Startups?

- **National Initiative for Developing and Harnessing Innovations (NIDHI)**
- **Startup India Action Plan (SIAP)**
- **Ranking of States on Support to Startup Ecosystems (RSSSE)**
- **Startup India Seed Fund Scheme (SISFS):** It aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialization.
- **National Startup Awards:** It seeks to recognize and reward outstanding startups and ecosystem enablers that are contributing to economic dynamism by spurring innovation and injecting competition.

- **SCO Startup Forum:** The first-ever **Shanghai Cooperation Organisation (SCO)** Startup Forum was launched in October 2020 to develop and improve startup ecosystems collectively.
- **Prarambh:** The 'Prarambh' Summit aims to provide a platform to startups and young minds from around the world to come up with new ideas, innovation and invention.

India-US Deal for Semiconductor Unit

Why in News?

Recently, US-based Company – Micron Technology, has signed a **Memorandum of Understanding (MoU)** with the state government of **Gujarat** to establish a **Semiconductor Unit** worth Rs 22,500 crore near **Ahmedabad**.

- Earlier, **India and the US signed MoU** on establishing the **Semiconductor Supply chain during India-US 5th Commercial Dialogue 2023**, which can help India realise its long-nurtured dream of becoming a hub for electronic goods.

What is the Significance of the MoU?

- The MoU seeks to establish a collaborative mechanism on semiconductor supply chain resiliency and diversification in view of US's **CHIPS and Science Act, 2022** and **India's Semiconductor Mission**.
- The project aims to create **5,000 direct jobs** and **contribute to India's Self-Reliance** in memory chip manufacturing.
- It aligns with govt's goal of promoting **domestic manufacturing and reducing import dependency** in the semiconductor sector and is expected to **bolster India's position as a global semiconductor manufacturer**.

What are Semiconductor Chips?

- **About:**
 - Semiconductors are **materials which have a conductivity between conductors and insulators**. They can be pure elements - **silicon** and **germanium** or compounds - **gallium**, **arsenide** and **cadmium selenide**.

Note:

- They are the **basic building blocks** that serve as the **heart and brain of all modern electronics** and information and communications technology products.
- These chips are now an integral part of contemporary automobiles, household gadgets and essential medical devices such as ECG machines.
- **Significance:**
 - Semiconductors are essential to **almost all sectors of the economy** including aerospace, automobiles, communications, clean energy, information technology and medical devices etc.
 - The high demand for these critical components has **outstripped supply, creating a global chip shortage** and resulting in lost growth and jobs in the economy.
 - Semiconductors and displays are the foundation of modern electronics driving the next phase of **digital transformation under Industry 4.0.**

Where does India

Stand in the Semiconductor Market?

- Indian semiconductor industry in 2022 was USD 27 Billion, with over **90% being imported**, and therefore a significant external dependence for Indian chip consumers.
 - Countries exporting semiconductors to India include **China, Taiwan, the USA, Japan, etc.**
- The Indian semiconductor market is expected to reach **USD 55 Billion by 2026** with its own consumption of semiconductors expected to cross USD 80 billion by 2026 and to USD 110 billion by 2030.

What are the Challenges Regarding Semiconductor Manufacturing in India?

- **Extremely Expensive Fab Setup:**
 - A semiconductor fabrication facility (or fab) can cost **multiples of a billion dollars to set up even on a relatively small scale** and lagging by a generation or two behind the latest in technology.
- **Higher Investment:**
 - Semiconductors and display manufacturing is a **very complex and technology-intensive** sector involving **huge capital** investments, high risk, long gestation and payback periods, and rapid changes in technology, which require significant and sustained investments.

➤ Minimal Fiscal Support from Government:

- The level of fiscal support currently **envisioned is minuscule when one considers the scale** of investments typically required to set up manufacturing capacities in the various sub-sectors of the semiconductor industry.

➤ Lack of Fabrication Capacities:

- India has a decent chip design talent but it never built-up chip fab capacity. The **ISRO and the DRDO have their respective fab** foundries but they are primarily for their own requirements and are also not as sophisticated as the latest in the world.
- India has only one old fab which is located in Mohali, Punjab.

➤ Resource Inefficient Sector:

- Chip fabs are also very **thirsty units requiring millions of litres of clean water**, an extremely stable power supply, a lot of land and a highly skilled workforce.

What are the Initiatives Related to Semiconductors?

- In 2021, India announced its roughly USD 10 billion-dollar **Production-Linked Incentive (PLI) scheme** to encourage semiconductor and display manufacturing in the country.
 - In 2021, the MeitY also launched the **Design Linked Incentive (DLI) Scheme** to nurture at least 20 domestic companies involved in semiconductor design and facilitate them to achieve a turnover of more than Rs.1500 crore in the next 5 years.
- India has also launched the **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS)** for manufacturing of electronics components and semiconductors.
- **India's Semiconductor Mission** was launched in **2021** with a total financial outlay of Rs 76,000 crore as a **part of the comprehensive program** for the development of sustainable semiconductors and display ecosystem in India. The components of the mission include:
 - **Scheme for setting up of Semiconductor Fabs in India**
 - **Scheme for setting up of Display Fabs in India** - fiscal support of up to 50% of Project Cost subject to a ceiling of INR 12,000 crore per Fab.
 - **Scheme for setting up of Compound Semiconductors / Silicon Photonics / Sensors Fab and Semiconductor ATMP/ OSAT facilities in India.**

Note:

Greedflation

Why in News?

Recently, there has been an increasing consensus in Europe and US that **Greedflation** is driving the rising cost of living rather than just **Inflation**.

➤ To understand greedflation it is important to know how inflation works.

INFLATION AND RELATED TERMS

INFLATION

- Rise in goods/services prices; corresponding decline in purchasing power
 - **Creeping Inflation:** Mild/moderate inflation where price level persistently rises over a period of time at a mild rate (single digit inflation rate)
 - **Galloping Inflation:** Occurs when mild inflation is not checked/controlled (inflation in double/triple digits - 20/100/ 200% annually)
 - **Hyperinflation:** Prices rise a million or even a trillion percent annually (witnessed by Germany in 1920s)

CORE INFLATION

- Change in costs of goods/services but **excluding those from food/energy sectors** (due to price volatility)

HEADLINE INFLATION

- **Headline Inflation** - Change in value of all goods in the basket (including food and energy)

Core = Headline - Food & fuel items

STAGFLATION

- When **Inflation, unemployment and economic stagnation/recession** occur simultaneously; **most difficult type of inflation** to manage
 - Witnessed by developed countries in the **1970s** (US, UK) when world oil prices rose dramatically

DEFLATION

- **Reverse of inflation** - a sustained decline in price of goods/services
 - Here, **annual inflation rate falls below 0%** resulting in an increase in the real value of money (Japan suffered for almost a decade in **1990s**)
 - Can worsen into **recession/depression**; hence, more dangerous than inflation

DISINFLATION

- When inflation rate decelerates
 - Implies that prices are rising (**inflation is happening**) but at a **slower rate** each passing month

Deflation is decline in prices, whereas disinflation is a decline in inflation rate



REFLATION

- Typically **follows deflation**
 - Policymakers try to **stimulate economic activity by producing inflation** (more govt spending, reduced interest rates etc.)

SKEWFATION

- Skewness of inflation among different sectors of the economy - **some sectors facing huge inflation while some none and some even deflation**

GREEDFLATION

- Where (corporate) **greed** is fuelling inflation; **companies increasing their prices beyond just covering costs** to maximise profits

SHRINKFLATION

- **Hidden form of inflation**; often leads to **customer frustration/dissatisfaction**
 - Practice of **reducing the size of a product while maintaining its sticker price**



Note:

What Causes Inflation?

➤ Causes:

- **Cost Push Inflation:** Prices get pushed up because input costs have risen.
 - **For Example:** If crude oil prices went up by 10% overnight because of a supply disruption, then the **general price level will be pushed up because energy costs** have gone up.
- **Demand Pull Inflation:** Prices are pulled up because there is excess demand.
 - **For Example:** If **RBI (Reserve Bank of India)** cuts interest rates sharply, making people buy a house quite affordable since the interest rate has fallen, then the sudden surge in demand for new houses will pull up home prices.

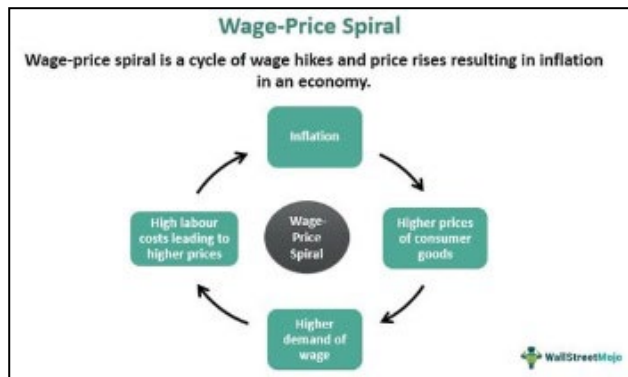
➤ Measures to Curb Inflation:

- **Monetary Policy:** When there is too much demand in the economy, central banks increase interest rates as their **Monetary Policy measure** (contractionary monetary policy) to **align demand with supply**. Similarly, if inflation arises from **cost pressures**, central banks **still raise interest rates**.
 - The primary objective is to **contain demand because central banks have limited tools** to directly boost supply.
 - They aim to prevent the **Wage-Price Spiral**, where rising prices lead to higher wages, increasing production costs and further price increases.
- **Fiscal Policy:** If there is inflationary pressure, the **government can reduce spending or increase taxes** to decrease aggregate demand and dampen price pressures in the economy.
 - **Fiscal policy** is the **use of government revenue collection** (mainly taxes but also non-tax revenues such as divestment, loans) and expenditure to **influence the economy**.

What is the Wage-Price Spiral?

- When prices rise, workers demand higher wages, but this **only increases overall demand without improving supply**.
- As a result, inflation worsens because higher wages lead to **increased purchasing power**, which drives up prices.
- Central banks raise interest rates to reduce economic activity and demand, which can **result in job losses**.

Despite its drawbacks, this approach is used by central banks to **prevent a cycle of rising wages and prices**, known as a wage-price spiral, and to curb inflation.



What is Greedflation?

➤ About:

- Greedflation refers to the situation where **corporate greed drives inflation**. Rather than a wage-price spiral, it is a **Profit-Price Spiral** where companies **exploit inflation by raising prices excessively**, going beyond covering their increased costs, and aiming to maximize their profit margins. These further fuels inflation.
 - There is a growing consensus in developed countries, like Europe and the US, that greedflation is the true culprit.

➤ Scenario:

- During crises like natural disasters or pandemics, prices often surge as businesses raise **them due to increased input costs**.
- However, in some cases, businesses exploit the situation by **making excessive profits through significantly higher price mark-ups**.

➤ Impact:

- Greedflation disproportionately **impacts low-income and middle-class individuals**, reducing their consumption and lowering their standards of living.
 - While **it benefits the wealthy** by increasing the value of their assets, **widening the wealth gap** and exacerbating income inequality.
- Sharp price increases and speculation driven by greed can create **bubbles and unsustainable market conditions**. This makes financial markets

Note:

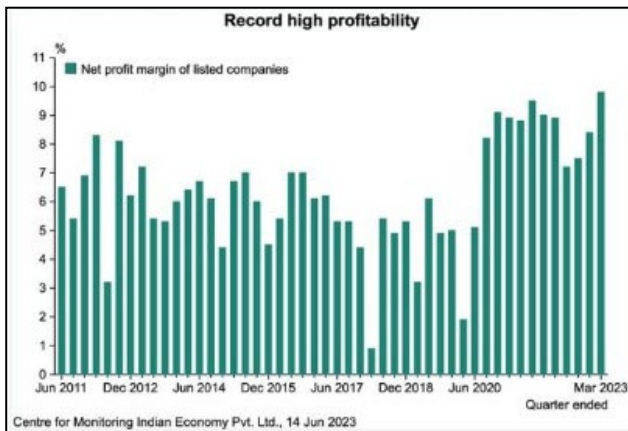
more **susceptible to crashes and crises**, posing risks to overall economic stability.

- Inflationary pressures caused by greedflation can result in **divergent policies among countries**. Each nation may adopt different strategies to combat inflation, leading to conflicting approaches.
 - This can exacerbate **global imbalances, trade tensions**, and geopolitical conflicts as countries seek to protect their own interests and competitiveness.

Is Greedflation Happening in India?

➤ Trend:

- The net profits of listed companies can be seen at a record high.



- Indian listed companies' (4,293) net profits surged to **Rs.2.9 trillion in March 2023**, over **3.5 times the pre-pandemic average** of Rs.0.83 trillion from December 2017 to Dec 2019, indicating exceptional post-pandemic profit generation.

➤ Existence of Greedflation:

- In India, 60% of the growth in net profit can be attributed entirely to the **increase in profit margin**. The increase in sales contributed an additional 36% and the rest was a bonus from a **combination of the two**, which suggests the **presence of greedflation**.

Animal Husbandry and Dairying

Why in News?

The Union Minister of Animal Husbandry and Dairying, Government of India recently **highlighted the achievements and initiatives** of the Department,

emphasizing the **importance of animal husbandry** in boosting rural incomes and supporting agricultural diversification.

- The Department has undertaken significant initiatives in the past nine years to enhance productivity.

What are the Achievements in Animal Husbandry and Dairying?

➤ Livestock Sector:

- **Livestock sector** contributes significantly to the Indian economy, with a **compound annual growth rate (CAGR) of 7.93% from 2014-15 to 2020-21**.
- The livestock sector's contribution to the total agriculture and allied sector **Gross Value Added (GVA)** has increased from **24.38% in 2014-15 to 30.87% in 2020-21**.
- Livestock population in India includes 303.76 million bovines, 74.26 million sheep, 148.88 million goats, 9.06 million pigs, and 851.81 million poultry **as per 20th Livestock Census**.

➤ Dairy Sector:

- **Dairy** is the **largest agricultural commodity in India**, contributing **5% to the national economy** and employing over 8 crore farmers directly.
- India ranks **1st in milk production**, accounting for 23% of global milk production.
- Milk production has increased by 51.05% in the past eight years, reaching 221.06 million tonnes in 2021-22.
- Milk production is growing at an annual growth rate of **6.1% over the past 8 years** whereas world milk production is growing at 1.2% per annum.
- **Per capita milk availability in India is 444 grams per day**, surpassing the world average of 394 grams per day.

➤ Egg and Meat Production:

- India ranks **3rd in egg production and 8th in meat production globally**.
- Egg production has increased from 78.48 billion in 2014-15 to 129.60 billion in 2021-22, growing at a rate of **7.4% per annum**.
- Meat production has risen from 6.69 million tonnes in 2014-15 to 9.29 million tonnes in 2021-22.

What are the Key Initiatives Taken to Enhance the Livestock Sector?

- **Rashtriya Gokul Mission:**

Note:



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- **Nationwide Artificial Insemination Programme:** Over 5.71 crore animals covered, benefiting 3.74 crore farmers.
 - Artificial insemination is a novel method of bringing about impregnation in female breeds.
- **Promotion of IVF Technology:** Production of viable embryos and birth of calves.
- **Sex Sorted Semen Production:** Introduction of sex sorted semen with up to 90% accuracy for producing female calves.
 - Only female calves can be produced (with more than 90% accuracy) which will help double the growth rate of milk production in the country.
- **DNA-based Genomic Selection:** Genotyping of animals for selection of elite indigenous breeds.
- **Animal Identification and Traceability:** Identification and registration of 53.5 crore animals using unique identification label (UID) tags.
- **Progeny Testing and Pedigree Selection:** Implemented for specific cattle and buffalo breeds.
- **National Digital Livestock Mission:** Enhance livestock productivity, control diseases, and ensure quality for domestic and export markets.
- **Breed Multiplication Farms:** Subsidy of 50% (up to Rs 2 crore per farm) on capital cost (excluding land cost) is provided to private entrepreneurs under this scheme for the establishment of breed multiplication farms.
- **Supporting Dairy Cooperatives and Farmer Producer Organizations:** Soft working capital loans are provided to assist dairy cooperative societies during adverse market conditions or natural calamities.
- **Dairy Processing & Infrastructure Development Fund (DIDF):** Creation and modernization of milk processing, chilling, and value addition infrastructure.
- **National Livestock Mission: Direct subsidies** to individuals, FPOs, and others to establish poultry farms, sheep and goat breed multiplication farms, piggery farms, and feed and fodder units.
 - **Animal Husbandry Infrastructure Development Fund:** Incentivizing investments for dairy and meat processing, animal feed plants, and breed improvement technology.
- **Livestock Health and Disease Control Programme:**
 - **Animals ear tagged:** Approximately 25.04 crores.
 - **Foot and Mouth Disease (FMD) vaccination:** 24.18 crore animals vaccinated in the second round, ongoing vaccination for Round III with 4.66 crore animals vaccinated.
- **Brucella vaccination:** 2.19 crore animals vaccinated.
- **Mobile Veterinary Units (MVUs):** 1960 MVUs flagged off in 16 States/UTs, with 1181 operational in 10 States.
- **Livestock Census & Integrated Sample Survey Scheme:**
 - **Integrated Sample Survey:** Provides estimates of major livestock products (Milk, Egg, Meat, Wool) published in the Annual Publication of Basic Animal Husbandry Statistics (BAHS).
 - **Livestock Census:** Provides species-wise and breed-wise livestock population data at the household level in rural and urban areas.
 - **20th Livestock Census completed in 2019**, with the publication of the “20th Livestock Census-2019” report containing species-wise and state-wise the population of livestock. Breed-wise reports on Livestock and Poultry were also published.
- **Kisan Credit Cards (KCC) for Dairy Farmers:** More than 27.65 lakh fresh KCCs sanctioned for AHD farmers in milk cooperatives and milk producer companies.

What are the Challenges in Animal Husbandry and Dairying?

- Disease management and animal health issues.
- Availability and quality of feed and fodder.
- Lack of modern infrastructure and technology.
- Shortage of skilled personnel and veterinary services.
- Financial constraints and limited access to credit.
- Marketing and distribution challenges.

Udyami Bharat-MSME Day 2023

Why in News?

On the occasion of **International MSME Day, 2023**, the Ministry of **Micro, Small & Medium Enterprises (MSME)** organized the ‘Udyami Bharat-MSME Day’ event, aimed at celebrating and promoting the growth and development of MSMEs.

- The event witnessed the launch of several initiatives by, the Union Minister for MSME, including the ‘CHAMPIONS 2.0 Portal,’ ‘Mobile App for Geo-tagging of Cluster Projects and Technology Centers,’ and the announcement of ‘MSME Idea Hackathon 3.0’ for women entrepreneurs.

Note:

What is International MSME Day?

➤ About:

- International MSME Day is observed on **27th June annually** to recognize the **significance of MSMEs** and their contribution to the economy.
- MSMEs are recognized as the backbone of the country's economy.

➤ Theme of MSME Day 2023:

- In India, the theme for MSME Day 2023 is **"Future-ready MSMEs for India@100."**
- The Global Council for the Promotion of International Trade celebrates with the theme **"Building a Stronger Future Together"** and launches the **#Brand10000MSMEs Network**.
 - **Global Council for the Promotion of International Trade** is an organisation based out of India, South Africa, USA, UAE, EU and the United Kingdom with board & council member representation across the world.

➤ History and Significance:

- In April 2017, the **United Nations** designated 27th June as Micro, Small, and Medium-sized Enterprises Day.
- The day aims to enhance national capacities for unleashing the full potential of MSMEs in achieving **Sustainable Development Goals**.

What are the Key Highlights of the Event?

➤ Initiatives Launched:

- **CHAMPIONS 2.0 Portal:**
 - The Ministry introduced the 'CHAMPIONS 2.0 Portal' aimed at **supporting and promoting MSMEs**.
 - This platform will provide various services such as **mentoring, capacity building, access to markets, and grievance redressal** to MSMEs.
- **Mobile App for Geo-tagging of Cluster Projects and Technology Centers:**
 - To enhance **efficiency and track the progress of cluster projects** and technology centers, the Ministry launched a mobile app for geo-tagging.
 - This app will facilitate **effective monitoring, evaluation, and reporting** of ongoing projects.
- **MSME Idea Hackathon 3.0 for Women Entrepreneurs:**

- Building on the success of the previous idea hackathon, the Ministry launched the 'MSME Idea Hackathon 3.0' specifically focused on women entrepreneurs.
- This initiative aims to **foster innovation, encourage entrepreneurial ideas**, and provide a **platform for women to showcase their talent** and contribute to the MSME sector.

➤ Memorandums of Understanding (MoUs) Signed:

- **Ministry of MSME and Small Industries Development Bank of India (SIDBI):**
 - To create a portal for '**PM Vishwakarma KAushal Samman**' (PMVIKAS) by SIDBI.
 - To identify the **local traditional artisans and craftsmen** who were not a part of any targeted interventions so far.
- **Ministry of MSME and GeM:**
 - To share **Udyam Registration data** with **Government e-Marketplace (GeM)** for last mile registration of MSMEs in the Public Procurement eco-system.
- **Ministry of MSME and the Industry Department, Government of Tripura:**
 - To share Udyam Registration data through API, easing policy making and targeted distribution of scheme benefits.
- **Ministry of MSME and Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE):**
 - To provide guarantee coverage to the beneficiaries of the MSME sector.
- **National Small Industries Corporation (NSIC) and National Scheduled Castes Finance and Development Corporation (NSFDC) & National Scheduled Tribes Finance and Development Corporation (NSTFDC):**
 - To promote mutual collaboration for **supporting SC/ ST entrepreneurs under National SC-ST Hub** and various schemes.

What is MSME?

➤ About:

- MSMEs form the backbone of the Indian economy, contributing significantly to employment generation, **industrial production, and overall economic growth**. These enterprises are engaged in the production, manufacturing, processing, or preservation of goods and commodities.

Note:

➤ Classification of MSMEs:

- MSMEs in India are classified based on their **investment in plant and machinery or equipment**, along with their **annual turnover**. The current classification is as follows:
 - **Micro Enterprises:** Investment up to Rs. 1 crore and turnover up to Rs. 5 crores.
 - **Small Enterprises:** Investment between Rs. 1 crore and Rs. 10 crores, and turnover between Rs. 5 crore and Rs. 50 crores.
 - **Medium Enterprises:** Investment between Rs. 10 crores and Rs. 50 crores, and turnover between Rs. 50 crore and Rs. 250 crores.

What is the Significance of MSME Sector?

➤ Global:

- According to the **United Nations** data, MSMEs account for **up to 90% of businesses**, **over 60% to 70% of jobs worldwide**, and half of global GDP.

➤ India:

- **Boon for Rural Development:** Compared with large-scale companies, **MSMEs aided in the industrialisation of rural areas at minimal capital cost**. The sector has made significant contributions to the country's **rural socio-economic growth and complemented major industries as well**.
- **Employment:** MSMEs employ over 110 million people across approximately 63 million enterprises.
- **Front Runner in Make in India Mission:** India aims that the **products that are 'Make in India'** also **'Made for the World,'** adhering to global standards of quality. **MSME is acquiring the center stage in the mission**. It is taken as a backbone in making this dream a possibility.
 - They produce **45% of India's manufactured goods**, and also contribute to over **50% of total exports**, and manufacture over 8,000 products with added value, spanning from traditional to advanced tech items.
- **Simple Management Structure for Enterprises:** Considering India's middle-class economy, MSME offers a flexibility that it **can start with limited resources within the control of the owner**. From this decision making gets easy and efficient.
 - On the contrary, a large corporation requires a specialist for every departmental functioning as it has a complex organizational structure.

- **Economic Growth and Leverage Exports:** It is the most significant driver in India contributing approximately 30% to **Gross Domestic Product (GDP)**.

What are the Recent

Government Initiatives Related to MSMEs?

- **Raising and Accelerating MSME Performance (RAMP) Scheme**
- **Credit Guarantee Trust Fund for Micro & Small Enterprises (CGTMSE)**
- **Interest Subsidy Eligibility Certificate (ISEC)**
- **A Scheme for Promoting Innovation, Rural Industry & Entrepreneurship (ASPIRE)**
- **Credit Linked Capital Subsidy for Technology Upgradation (CLCSS)**
- **Zero Defect & Zero Effect (ZED)**

What are the Challenges Faced by MSMEs?

- Limited access to formal finance and credit facilities.
- Lack of **technological advancements** and limited digital infrastructure.
- Difficulty in complying with **complex regulatory and bureaucratic processes**.
- Limited **market access** and competition from large-scale enterprises.
- **Skilled labor shortage** and challenges in talent acquisition.
- **Vulnerability to economic downturns** and market fluctuations.
- Lack of awareness about government schemes and support programs.

Manipur Invokes RBI's Riot Provisions

Why in News?

Recently, the Manipur government invoked the Riot Provision of the **Reserve Bank of India (RBI)** in response to a **Grave Situation in the State** marked by riots and violence.

- The order acknowledged the **borrowers' inability to repay loans due to the crisis and sought relief measures** for the affected individuals.

Note:

- While typically applied in areas affected by natural calamities, this move **marks the first instance of its utilization** in response to a law-and-order situation.

What are the Provisions?

- **RBI Directions 2018:**
 - The Provisions are as per Chapter No. 7 of the **"Reserve Bank of India (Relief Measures by Banks in Areas Affected by Natural Calamities) Directions, 2018."**
 - Whenever RBI advises the banks to extend rehabilitation assistance to riot/disturbance affected persons, the **aforesaid guidelines may broadly be followed by banks** for the purpose.
 - The Provisions specifically addresses **"Riots and Disturbances"**.
 - The rules specify **several norms that must be followed for Restructuring the Loans**, providing fresh loans and other measures, including KYC norms.
 - According to the directions, all the short-term loans, except those overdue at the time of the occurrence of riots, will be eligible for restructuring.
- **Applicability:**
 - The provisions of these Directions shall apply to every Scheduled Commercial Bank (including Small Finance Banks (SFBs) and excluding Regional Rural Banks (RRBs) licensed to operate in India by RBI.
- **Crop Loans:**
 - In the case of crop loans, if the **loss ranges between 33% and 50%**, borrowers are eligible for a maximum repayment period of two years. If the crop loss exceeds 50%, **the repayment period can be extended up to a maximum of five years**.
 - Additionally, all restructured loan accounts will **have a moratorium period of at least one year**.
- **Long Term Agri Loan:**
 - If the crop is damaged without harm to productive assets, banks can **reschedule installment payments** for the affected year and extend the loan period by one year.
 - Additionally, banks have the **option to postpone interest payments by borrowers**. However, if productive assets are also damaged, a new loan may be required.
- **Fresh loans:**

- Banks will evaluate borrowers' credit needs, **follow loan approval procedures**, and may offer collateral-free consumption **loans up to Rs 10,000** to existing borrowers without personal guarantees, even if the value of assets is lower than the loan amount.
- **Relaxation in KYC Norms:**
 - For the people who have lost their documents due to the calamity of riots, **the banks need to open new accounts for such people**.
 - This will be applicable where the balance in the account does not exceed Rs 50,000. The total credit in the account should not exceed Rs 1,00,000.

What is Loan Restructuring?

- **About:**
 - Loan restructuring allows **businesses, people, and governments to avoid bankruptcy by negotiating lower interest rates** on their debts. When a debtor has trouble paying their bills, loan **restructuring is less expensive than going bankrupt**. It can help both the **debtor and the creditor**.
 - Companies can avoid bankruptcy by renegotiating their debt commitments' terms to acquire flexibility quickly and manage their overall debt load.
- **Benefits:**
 - The main goal **of debt restructuring is to save and keep the business going**.
 - It protects the business from creditors through the law.
 - If the company doesn't go bankrupt, creditors get back more money. When it comes to people who want to borrow money, a debt-restructuring personal loan helps **creditors get better results**.

Unprecedented Rise in Jeera Prices

Why in News?

- Over the past few months, **Jeera (Cumin)** prices have experienced an unprecedented surge.
- The primary reason for the price surge is the **significant imbalance between the supply of jeera and its demand**. The arrivals of jeera in the market have been considerably **lower than the demand**, leading to a scarcity of the spice.

Note:



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What are the Key points Related to Jeera?

➤ About:

- Jeera is an **aromatic seed that enhances** the flavor of Indian dishes. It is one of the important **spices & condiments, widely used** for culinary as well as medicinal purposes.
- Jeera is reported to have originated from the Mediterranean to India. Cumin was known to the **Egyptians 5,000 years ago and it was found in the pyramids.**

➤ Importance:

- The economically important part of the plant is the dried fruit. It is used as a **condiment in various cuisines of different cultures** either as whole or in powdered form.
- Cumin oil is reported to have **antibacterial activity.** It is used in veterinary medicines and various other industries.



➤ Climate and Cultivation:

- Jeera grows well in both **tropical and sub-tropical climate** and it comes up well in all types of soils, but well drained sandy loam soils are best suited.
- Jeera cultivation is highly **sensitive to weather conditions.** It requires a moderately **cool and dry climate** without humidity, which limits cultivation to **specific regions in Gujarat and Rajasthan.**
 - Unjha, situated in the heart of **India's jeera cultivation belt in Gujarat**, has emerged as the primary market setting the prices for the crop.
- Gujarat is the largest producer of jeera in the country.

- It is **Rabi Crop**, sown in October to November and harvested in February and March.

➤ Major Producers:

- India dominates global jeera production, accounting for **approximately 70% of the world's output.**
- Other countries such as **Syria, Turkey, UAE, and Iran** make up the remaining 30%.
 - Production disruptions caused by civil war and natural disasters in these countries have further highlighted **India's significance as a major producer.**

Remittance Inflow

Why in News?

According to the **World Bank's latest Migration and Development Brief**, India, which saw a record-high of **USD 111 billion in remittances in 2022**, is expected to experience **minimal growth of just 0.2% in remittance inflows in 2023.**

- The main reasons for this are the slower growth in OECD economies, especially in the high-tech sector, and the **lower demand for migrants in the GCC countries.**
- Overall, remittance growth is projected to be slower globally, with **Latin America and the Caribbean showing the highest growth while South Asia lags behind.**

What are Remittances?

- **Remittances are money transfers that migrants send to their families and friends in their home countries.**
- They are an **important source of income and foreign exchange** for many developing countries, especially those in South Asia.
- Remittances can help **reduce poverty, improve living standards, support education and health care,** and stimulate economic activity.

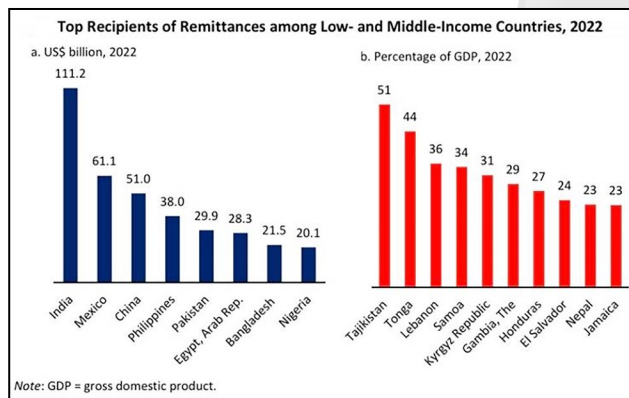
What are the

Remittance Trends Across the Globe?

- The top five recipient countries for remittances in 2022 were **India, Mexico, China, the Philippines, and Pakistan.**
- Remittance flows to **low- and middle-income countries (LMICs)** are projected to **moderate to 1.4% in 2023**, with **total inflows estimated at USD 656 billion.**

Note:

- **East Asia and the Pacific region may witness a decline in remittance growth** due to tight monetary stances, limited fiscal buffers, and global uncertainty surrounding geopolitical events.
- Remittances to **Europe and Central Asia** are anticipated to grow by 1%, influenced by a high base effect, weakened flows to **Ukraine and Russia**, and a depreciating Russian ruble.
- Remittances in the **Middle East and North Africa** may recover with declining oil prices, particularly for countries like **Egypt**.
- Remittance growth rates for **East Asia and Pacific**, as well as **Sub-Saharan Africa**, are projected to be around 1% in 2023.
- Remittance inflows played a **vital role in funding current account and fiscal shortfalls in countries like Tajikistan, Tonga, Lebanon, Samoa, and the Kyrgyz Republic**.



What are the Factors Affecting Remittance Flows to India?

- **Top Sources of Remittances for India:**
 - Approximately **36% of India's remittances originate from high-skilled Indian migrants in three high-income destinations: the US, United Kingdom, and Singapore**.
 - The post-pandemic recovery led to a tight labor market in these regions, resulting in wage hikes that boosted remittances.
 - Other high-income destinations for Indian migrants, such as the **Gulf Cooperation Council (GCC) countries**, experienced favorable economic conditions, including high energy prices and curbed food price inflation, which increased remittance inflows.

Factors Affecting Remittance Flows to India:

- **Slower Growth in OECD economies:** The **Organisation for Economic Co-operation and Development (OECD)** is a grouping of **38 high-income democratic countries**. These countries are major destinations for high-skilled and high-tech Indian migrants, who account for almost 36% of India's remittances.
 - The World Bank expects that the growth of these economies will moderate from **3.1% in 2022 to 2.1% in 2023 and 2.4% in 2024**.
 - This could affect the demand for IT workers and lead to a diversion of formal remittances toward informal money transfer channels.
- **Lower Demand for Migrants in GCC countries:** GCC is a political and economic alliance of six Middle Eastern countries—**Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman**.
 - These countries are the **single largest destination for less-skilled South Asian migrants**, who account for about **28% of India's remittances**.
 - The World Bank expects that the growth of these countries will slow from **5.3% in 2022 to 3% in 2023 and 2.9% in 2024**.
 - This is mainly due to the declining oil prices, which have dented their fiscal revenues and public spending.

What are the Ways to Enhance Remittance Inflow in India?

- **Unified Payment Interface:** UPI enables real-time fund transfers, allowing remittances to be sent and received instantly. This eliminates the **need for lengthy processing times associated with traditional remittance methods**, providing recipients with quicker access to funds.
 - In January 2023, The **National Payments Corporation of India (NPCI)** allowed NRIs living in 10 countries to use UPI using their international mobile numbers.
 - The ten countries include **Singapore, Australia, Canada, Hong Kong, Oman, Qatar, USA, Saudi Arabia, United Arab Emirates, and the United Kingdom**.
- **Artificial Intelligence (AI)-Driven Risk Assessment:** India can utilize **AI algorithms** to analyze transaction patterns, detect potential fraud, and assess risk factors associated with remittance transfers.

Note:

- This approach can enhance security and help prevent illegal activities, ensuring compliance with regulations.
- **Integration with E-commerce Platforms:** India can collaborate with e-commerce platforms to integrate remittance services directly into their platforms.
- This enables recipients to utilize remittance funds for online purchases or bill payments, enhancing financial inclusion and expanding the scope of remittance utilization.

Impact of US Federal Reserve's Policy on Indian Markets

Why in News?

The recent **US Federal Reserve** policy meeting, keeping the policy rate unchanged at 5.25% but signaling two rate hikes to reach 6% by end-2023, has sparked speculation on India's **interest rates** and markets.

- While the Fed chose to maintain the status quo, it hinted at the possibility of two more rate hikes this year to combat **inflation**.

What is the Impact of Fed's Policy on the Indian Market?

- The Indian markets fell by 0.49% on June 29, 2023, following the Fed's policy announcement.
- The Fed's policy affects the Indian markets through various channels such as:
 - **Exchange Rate Channel:** The Fed's rate hikes tend to strengthen the US dollar against other currencies, including the **Indian rupee**.
 - A weaker rupee also increases the debt servicing costs for Indian borrowers who have taken loans in foreign currency.
 - **Capital Flow Channel:** The Fed's rate hikes also reduce the interest rate differential between the US and India, which makes India less attractive for foreign investors who seek higher returns.
 - This could lead to **capital outflows** from India's equity and debt markets, which could lower asset prices and increase volatility.
 - **Capital outflows** could also reduce India's foreign exchange reserves and create liquidity crunches in domestic markets.

- **Inflation Channel:** The Fed's rate hikes could also affect India's inflation through two ways.
 - First, a **weaker rupee could increase the imported inflation for India**, as it raises the cost of imported goods such as oil, gold and electronics.
 - Second, **higher global commodity prices due to strong US demand could also push up India's domestic inflation**, as it affects the input costs for various sectors such as agriculture, manufacturing and services.
- **Growth Channel:** The Fed's rate hikes could also have an impact on India's economic growth through two ways.
 - First, a **tighter US monetary policy could slow down the global economic recovery** from the pandemic, which could hurt India's export prospects and external demand.
 - Second, **higher domestic interest rates due to capital outflows and inflation pressures** could dampen India's domestic demand and investment activity.

What are Some of the Possible Scenarios for Indian Markets?

- **Best-case Scenario:** The Fed's rate hikes are gradual and moderate, and are accompanied by clear and credible communication.
 - The RBI maintains an **accommodative stance** and supports the liquidity and credit conditions in India.
 - **India's economic recovery is robust and resilient**, supported by strong domestic and external demand. India's inflation is contained and manageable, and its fiscal and current account deficits are under control.
 - **Global risk appetite is high** and foreign investors remain positive on India's growth potential and reforms.

Note: An accommodative stance means the central bank is prepared to expand the money supply to boost economic growth. The central bank, during an accommodative policy period, is willing to cut the interest rates.

- **Worst-case Scenario:** The Fed's rate hikes are sudden and aggressive, and are driven by unexpected inflation shocks.

Note:

- The RBI is forced to tighten its policy to defend the rupee and curb inflation. India's economic recovery is weak and uneven, hampered by pandemic-related uncertainties and structural bottlenecks.
- India's inflation is high and persistent, and its fiscal and current account deficits are unsustainable.
- Global risk appetite is low and foreign investors flee from India's markets due to geopolitical tensions, policy uncertainty and governance issues.

India Infrastructure Project Development Fund

Why in News?

To support the Digital India initiative, the Infrastructure Finance Secretariat (IFS), under the Ministry of Finance has launched the **IIPDF (India Infrastructure Project Development Fund) Portal**.

- This online platform allows the submission of applications **under the IIPDF Scheme, reducing processing time, paperwork**, and facilitating timely approvals.

What is IIPDF Scheme?

- **Background:**
 - IIPDF was created in the Department of Economic Affairs (DEA), Ministry of Finance, Government of India with an **initial corpus of Rs. 100 crore for supporting the development of Public Private Partnership (PPP) projects** that can be offered to the private sector.
- **About:**
 - DEA has restructured the existing fund IIPDF as a **Central Sector Scheme** with total outlay of Rs.150 Crore for a period of 3 years from 2022-23 to 2024-25.
 - It is available to the Sponsoring Authorities for **PPP projects for meeting the project development costs**.
 - It would be necessary for the Sponsoring Authority to create and empower a PPP Cell to undertake PPP project development activities and also address larger policy and regulatory issues.
- **Objective:**
 - It is aimed at providing **financial support for quality project development** activities.

Significance:

- The Sponsoring Authority will be able to source funding to cover a portion of the PPP transaction costs, thereby reducing the impact of costs related to procurement on their budgets.

Financial Outlay:

- The IIPDF contributes **upto 75% of the project development expenses** to the Sponsoring Authority as an interest free loan. The balance of 25% will be co-funded by the Sponsoring Authority.
- On successful completion of the bidding process, the project development expenditure would be recovered from the successful bidder.
 - However, in the case of failure of the bid, the loan would be converted into grant.
- In case the **Sponsoring Authority does not conclude the bidding process** for some reason, the entire amount contributed would be refunded to the IIPDF.

Approval Committee (AC):

- The IIPDF scheme shall be administered by the AC. The composition of the AC is as under:
 - Joint secretary, DEA- Chairperson
 - Representative of NITI Aayog
 - Deputy Secretary/Private Investment Unit, DEA- Member Secretary

What is the Status of the Infrastructure Sector of India?

About:

- Infrastructure development plays a crucial role in **India's growth trajectory**, acting as a catalyst for economic development across various sectors.
- The Indian government has recognized the significance of **robust infrastructure and has launched several initiatives** and investments to drive progress.

Current Market Size and Outlook:

- The infrastructure sector in India is poised to grow at a **CAGR of 8.2% by 2027**.
- The capital investment outlay for infrastructure in **Budget 2023-24** is being increased by **33% to Rs. 10 lakh crore (USD 122 billion)**, accounting for 3.3% of GDP.
- India is expected to be one of the largest economies in the world by 2047 with a GDP of about USD 35- 40 trillion as per **CII (Confederation of Indian Industry)** estimates from about USD 3.5 trillion in 2022 which increased by about 2x since 2010.

Note:



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- In addition, the country's industrial **output has increased by 56% since 2010**, which has supplemented the pace of urbanization which is expected to accelerate by 2047.

➤ **Government Initiatives:**

- **PM Gati Shakti Scheme**
- **National Infrastructure Pipeline**
- **Urban Infrastructure Development Fund**
- **National Logistics Policy**
- **Dedicated Freight Corridors**

CBIC Releases National Time Release Study (NTRS) 2023 Report

Why in News?

Recently, the **Central Board of Indirect Taxes and Customs (CBIC)** has released the **National Time Release Study (NTRS) 2023 report**, which measures the **cargo release time** at various ports in India.

- The report aims to assess the progress made towards the **National Trade Facilitation Action Plan (NTFAP) targets**, identify the impact of various trade facilitation initiatives, and identify the challenges to more expeditious reduction in release time.
- The study was conducted based on a **sample period of January 1-7, 2023**, comparing the performance with the corresponding periods of 2021 and 2022.
- The ports included in the study represent **seaports, air cargo complexes (ACCs), inland container depots (ICDs), and integrated check posts (ICPs)**. These account for approximately 80% of bills of entry and 70% of shipping bills filed in the country.

What is the Cargo Release Time?

- Cargo release time is defined as the **time taken from the arrival of the cargo at the Customs station to its out-of-charge for domestic clearance in case of imports and arrival of the cargo at the Customs station to the eventual departure of the carrier in case of exports**.
- Cargo release time is a key indicator of **trade efficiency and ease of doing business**, as it reflects the effectiveness of customs procedures and other regulatory processes involved in cross-border trade.

- Cargo release time is measured using **Time Release Study (TRS)**, a performance measurement tool recommended by the **World Customs Organization (WCO)**.

What are the

Key Highlights of NTRS 2023?

➤ **Import Release Time Improvements:**

- The average import release time has **shown improvements compared to previous years**.
- There was a **20% reduction in release time for ICDs**, an **11% reduction for ACCs**, and a **9% reduction for seaports in 2023 over 2022**.
- In absolute terms, the import release time for seaports is 85 hours and 42 minutes, for ICDs is 71 hours and 46 minutes, for ACCs is 44 hours and 16 minutes, and for ICPs is 31 hours and 47 minutes.
- The lower measure of standard deviation indicates a greater certainty of expeditious release of imported cargo.

➤ **Reaffirmation of 'Path to Promptness':**

- The findings of NTRS 2023 reaffirm the importance of the **three-fold 'Path to Promptness' strategy**.
- This strategy includes **advance filing of import documents** for pre-arrival processing, **risk-based facilitation of cargo**, and the **benefits of the trusted client program - Authorised Economic Operators**.
- Cargoes that combine all three features under the 'Path to Promptness' achieve the **National Trade Facilitation Action Plan (NTFAP)** release time target across all port categories.

➤ **Focus on Export Release Time:**

- NTRS 2023 has placed a greater focus on measuring the release time for exports.
- The study recognizes the distinction between **regulatory clearance (customs release) and physical clearance**.
 - Regulatory clearance is completed with the **grant of Let Export Order (LEO)**, while **physical clearance occurs upon the completion of logistics processes and the departure of the carrier with the goods**.

What are the Benefits of NTRS 2023?

- NTRS 2023 provides a **comprehensive and objective assessment** of the cargo release time performance at various ports in India.
- NTRS 2023 helps to identify the **areas of improvement and benchmarking against global standards**.

Note:



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- NTRS 2023 supports **evidence-based policy making** and implementation of trade facilitation measures that enhance trade efficiency and competitiveness.
- NTRS 2023 contributes to achieving the NTFAP targets and fulfilling India's commitments under the **WTO Trade Facilitation Agreement**.

National Trade Facilitation Action Plan (NTFAP)

- NTFAP aims to implement the provisions of the **WTO's Trade Facilitation Agreement (TFA) in India**.
- TFA focuses on **simplifying customs procedures and norms for cross-border trade**.
- NTFAP was prepared by the National Committee on Trade Facilitation (NCTF) chaired by the Cabinet Secretary.
 - It includes over 90 specific activities with timelines for implementation, aligned with India's policy objectives.
- NTFAP covers areas like advance import document filing, risk-based cargo facilitation, trusted client program, infrastructure upgrades, legislative issues, outreach programs, and agency coordination.
- NTFAP reduces trade costs, enhances efficiency, supports evidence-based policy making, and fulfills India's TFA commitments.

What are the Initiatives Related to Logistics?

- **National Logistics Policy (NLP)**
- **Multimodal Transportation of Goods Act, 1993.**
- **PM Gati Shakti Scheme**
- **Multi Modal Logistics Parks**
- **LEADS Report**
- **Dedicated Freight Corridor**
- **Sagarmala Projects**
- **Bharatmala Project**

Central Board of Indirect Taxes and Customs

- It is a **part of the Department of Revenue under the Ministry of Finance**.
- The Central Board of Excise and Customs (CBEC) was **renamed as the CBIC in 2018 after the roll out of the GST**.
- It deals with the tasks of formulation of policy concerning levy and collection of customs, central excise duties, Central GST (CGST) and Integrated GST (IGST).

- **GST Law** comprising (i) Central Goods and Services Tax Act, 2017 (ii) State Goods and Services Tax Act, 2017 (iii) Union Territory Goods and Services Tax Act, 2017, (iv) Integrated Goods and Services Tax Act, 2017 (v) Goods and Services Tax (Compensation to States) Act, 2017.

Global Wind Day

Why in News?

Global Wind Day is celebrated on 15th Jun June 2023 by the Ministry of New and Renewable Energy (MNRE) with the theme of **"Pawan - Urja: Powering the Future of India"**.

- MNRE has **set the target of 500 GW renewable energy capacity by 2030** and **Wind Atlas at 150 meter above ground level** was also launched by **National Institute of Wind Energy (NIWE)**, estimating the **onshore wind potential at 1,164 GW**.

What is Global Wind Day?

- Global Wind Day has been an annual event since 2007 to promote wind energy as a clean and renewable source of power.
- It was started by the European Wind Energy Association (EWEA) and later joined by the **Global Wind Energy Council (GWEC)**.
 - GWEC is a member-based organisation that represents the entire wind energy sector.

What is Wind Energy?

- **About:**
 - Wind energy is a **form of renewable energy** that **uses the kinetic energy of the air to generate electricity**.
- **Mechanism:**
 - Wind energy is **created using wind turbines, which are devices that have blades that rotate** when the wind blows.
 - The rotation of the blades drives a generator that produces electricity.
 - **Wind energy can be generated on land or offshore**, where there are stronger and more consistent winds.
 - **Emission of Gases:**

Note:

- Wind energy is a **clean and renewable source of power** that **does not emit greenhouse gases** or other pollutants.

➤ **Uses:**

- Wind energy **can be used for homes, businesses, farms**, and other applications. Wind energy is one of the **fastest-growing renewable energy** sources in the world.

➤ **Some Facts About Wind Energy:**

- **Global:**
 - The **largest wind power market in the world is China**, with a **capacity of over 237 GW** of wind power installed followed by U.S and Germany.
 - China also **has the world's largest onshore wind farm** in Gansu Province, built out of the Gobi Desert.
- **India Specific:**
 - India ranks **fourth in wind power capacity** (with 42.8 GW as of April 2023) in the world and has a huge potential for both onshore and offshore wind energy production.
 - Wind energy is vital for India's transition to a low-carbon economy and achieving its goals of 50% non-fossil fuel-based energy by 2030 and **Net Zero by 2070**.
 - **Tamil Nadu installs highest wind power capacity** till June 2022 followed by Gujarat and Karnataka.

➤ **Indian Initiatives:**

- **National Wind-Solar Hybrid Policy:** The main objective of the National Wind-Solar Hybrid Policy, 2018 is to provide a framework for promotion of large grid connected wind-solar PV hybrid systems for optimal and efficient utilization of wind and solar resources, transmission infrastructure and land.
- **National Offshore Wind Energy Policy:** The National Offshore wind energy policy was notified in October 2015 with an objective to develop the offshore wind energy in the Indian **Exclusive Economic Zone (EEZ)** along the Indian coastline of 7600 km.

➤ **Global Initiative:**

- **Global Offshore Wind Alliance (GOWA)** founded by Denmark, the **International Renewable Energy Agency (IRENA)**, and the **Global Wind Energy Council (GWEC)**, was officially launched at COP27 in November 2022, where a large group of countries agreed to a rapid ramp-up of offshore wind.
 - For the coming three years, the founders and **Colombia will co-chair the Alliance**.

Sovereign Gold Bond Scheme 2023-24

Why in News?

Recently, the Government of India, in consultation with the **Reserve Bank of India**, has decided to issue **Sovereign Gold Bonds (SGBs)** in tranches for 2023-24.

- The first SGB scheme was launched by the Government in November 2015, under **Gold Monetisation Scheme** with an objective to **reduce the demand for physical gold** and shift a part of the domestic savings - used for the purchase of gold - into financial savings.

What are the Key Details of the Scheme?

Item	Details
Issuance	Issued by the Reserve Bank of India on behalf of the Government of India.
Eligibility	SGBs will be restricted for sale to resident individuals, HUFs (Hindu Undivided Family), Trusts, Universities and Charitable Institutions .
Tenor	The tenor of the SGB will be for a period of eight years with an option of premature redemption after 5th year .
Minimum size	Minimum permissible investment will be One gram of gold .
Maximum limit	The maximum limit of subscription shall be 4 Kg for individuals, 4 Kg for HUF and 20 Kg for trusts and similar entities per fiscal year (April-March) notified by the Government from time to time.
Joint holder	In case of joint holding, the investment limit of 4 Kg will be applied to the first applicant only.
Issue price	Price of SGB will be fixed in Indian Rupees on the basis of simple average of closing price of gold of 999 purity, published by the India Bullion and Jewellers Association Limited.
Sales channel	SGBs will be sold through Scheduled Commercial banks (except Small Finance Banks, Payment Banks and Regional Rural Banks), Stock Holding Corporation of India Limited, Clearing Corporation of India Limited , designated post offices and National Stock Exchange of India Limited and Bombay Stock Exchange Limited, either directly or through agents.

Note:

Interest rate	The investors will be compensated at a fixed rate of 2.50% per annum payable semi-annually on the nominal value (face value or stated value).
Collateral	The SGBs can be used as collateral for loans.
Tax treatment	The interest on SGBs shall be taxable as per the provision of the Income Tax Act, 1961. The capital gains tax arising on redemption of SGB to an individual is exempted .
Tradability	SGBs shall be eligible for trading.
SLR eligibility	SGBs obtained by banks through the pledge process will be considered as part of their Statutory Liquidity Ratio requirements.

What is India Bullion and Jewellers Association Ltd. (IBJA)?

- IBJA was **established in 1919** as an association for bullion traders in India.
- IBJA is considered the **apex association for all bullion and jewellery associations in India**.
- It **publishes daily Gold AM and PM Rates**, which are benchmark rates for issuing Sovereign and Bonds.
- IBJA is involved in promoting trade through exhibitions and is setting up its own **Domestic Gold Spot exchange, Bullion refinery, and gems & jewellery park**.
- It assists its members in promoting and **regulating bullion trade, resolving disputes, providing a neutral platform for weighing precious metals**, and interacting with government departments.
- IBJA owns a building in **Zaveri Bazaar, Mumbai**, where it **carries out various business activities for the bullion and jewellery industry**.

Adoption of E20 Fuel and Green Hydrogen Production

Why in News?

In a recent announcement, the Union Minister of Petroleum and Natural Gas highlighted that **petrol blended with 20% ethanol, known as E20**, will soon be available at **1,000 outlets of oil marketing companies (OMCs) nationwide**.

- The **National Green Hydrogen Mission** aim to achieve a production capacity of **5 Million Metric Tonnes (MMT) per annum by 2030**, was also highlighted.

What is Ethanol Blending and E20 Fuel?

- **About:**
 - **Ethanol is an agricultural by-product which is mainly obtained from the processing of sugar from sugarcane**, but also from other sources such as rice husk or maize.
 - **Blending ethanol with petrol to burn less fossil fuel while running vehicles** is called **Ethanol Blending**.
 - **E20 fuel is a blend of 20% ethanol and 80% petrol**. The E20 was launched by the **Prime Minister of India in February 2023 in Bengaluru**. This pilot covers at least 15 cities and will be rolled out across the country in a phased manner.
 - India has been increasing **its ethanol blending in petrol from 1.53% in 2013-14 to 10.17% in 2022**.
 - The government has advanced its target to achieve 20% ethanol blending in petrol **from 2030 to 2025**.
 - During our **G20 presidency**, the government has also proposed to launch a **global biofuel alliance with countries like Brazil** to promote biofuels internationally.
- **Advantages:**
 - E20 fuel has several advantages over conventional petrol, such as:
 - It **reduces vehicular tailpipe emissions** by lowering the carbon monoxide, hydrocarbons and nitrogen oxides levels.
 - It **improves engine performance and reduces maintenance costs** by preventing corrosion and deposits.
 - It **reduces the import bill for crude oil** by substituting domestic ethanol production.
 - It is estimated that a **5% blending (105 crore litres)** can result in replacement of **around 1.8 million barrels of crude oil**.
 - India imported 185 million tonnes of petroleum at a cost of USD 551 billion in 2020-21. A successful E20 programme **can save the country USD 4 billion or Rs 30,000 crore per annum**.

Note:



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- It supports the farmers and rural economy by creating demand for surplus crops.

➤ Challenges:

- **Shift Towards Sugarcane Production:** In order to achieve a 20% blend rate, almost **one-tenth of the existing net sown area will have to be diverted for sugarcane production.**
 - Any such land requirement is likely to put a **stress on other crops and has the potential to increase food prices.**
- **Storage Constraint:** Annual capacity of required bio-refineries is stipulated to be **300-400 million litres**, which is still not enough to meet the 5% petrol-ethanol blending requirement.
 - Storage is going to be the main concern, **for if E10 supply has to continue in tandem with E20 supply**, storage would have to be separate which then raises costs.

What is Green Hydrogen?

➤ About:

- **Green hydrogen** is hydrogen produced by **electrolysis of water using renewable or green energy.**
- It is considered the **cleanest form of energy, as it does not emit any greenhouse gases when used.**
 - India has the potential to become a leader and a superpower in green hydrogen production, **according to the International Energy Agency (IEA).**
 - India has abundant renewable capacity, especially solar power, which can be used to produce green hydrogen at low cost.
 - India has also set a target of producing **5 million metric tonnes of green hydrogen per annum by 2025-26** under its National Hydrogen Mission.
 - The **private sector is also actively engaged in pursuing green hydrogen production** and has attracted significant investment from international sources.

➤ Applications:

- **Decarbonizing Energy Systems:** Green hydrogen can be used as a clean energy carrier and stored for later use.
 - It can be utilised in sectors such as **power generation, heating, and transportation to replace fossil fuels**, thereby reducing **carbon emissions.**

- **Production of Green Ammonia:** Green hydrogen has the potential to replace **traditional fertilisers in agriculture through the production of ammonia using renewable energy sources.**

- Green ammonia produced with help of green hydrogen is carbon-free, it has other benefits **over traditional fertilisers, including improved efficiency and reduced soil acidity.**

- **Off-Grid and Remote Power Generation:** Green hydrogen can provide reliable and clean power in **off-grid or remote locations where access to electricity is limited.**

- It can be used in **fuel cells or combustion engines** to generate electricity for communities, industries, and infrastructure.

➤ Challenges:

- **Cost:** Currently, the **production of green hydrogen is more expensive compared to hydrogen produced from fossil fuels through steam methane reforming.**
 - The high cost is primarily due to the capital investment required for renewable energy infrastructure.
- **Scale and Infrastructure:** Establishing a comprehensive green hydrogen infrastructure, including **production, storage, and transportation, is a significant challenge.**
 - Scaling up production capacity and building a distribution network for hydrogen require substantial investments.
 - Additionally, **retrofitting existing infrastructure or creating new pipelines, storage facilities, and refuelling stations adds to the complexity and cost.**
- **Impact on Resources:** About **9 kilograms (kg) of water** is required per kg of hydrogen.
 - The **production of green hydrogen requires vast amounts of resources: land, water, and renewable energy.** This can fuel land-use and water conflicts, human rights violations, energy poverty, and the delay of the de-carbonisation of the electricity grid in producer countries
- **Energy Efficiency:** The process of electrolysis requires large amounts of electricity to split water into hydrogen and oxygen.
 - While **renewable energy sources can provide a clean electricity input**, the overall energy efficiency of the process is relatively low.

Note:

International Relations

Highlights

- India Us Partnership
- Wagner Mutiny in Russia
- India US Strategic Partnership
- India-Egypt Relations
- India's Jet Engine Deal with the US
- China Blocks Proposal to Blacklist Pakistan-Based Terrorist
- U.S.-India initiative on Critical and Emerging Technology
- Oslo Forum and Afghan Peace Talks

India Us Partnership

INDIA-US PARTNERSHIP

Economic Relations

- US became India's biggest trading partner in 2022-23 followed by China and UAE
- The bilateral trade has increased by 7.65% in 2022-23 (compared to 2021-22)

Defence Cooperation

- India-US Defence Acceleration Ecosystem (INDUS-X), 2023: Start-ups and tech companies to collaborate on the co-development and co-production of advanced technologies
- Fighter Jet Deal, 2023: GE's F414 engine technology and manufacturing will be transferred for India's Tejas Mk2 jet, enhancing its indigenous capabilities
- Defence Technology and Trade Initiative (DTTI), 2012: To facilitate collaboration in defence manufacturing, research and development, and technology transfer
- New Framework for India-US Defence Relations, 2005: Updated for 10 years in 2015

India intends to procure armed MQ-9B SeaGuardian UAVs

Science & Technology

- Initiative on Critical and Emerging Technologies (ICET), 2022: Cooperation on CETs in areas including AI, quantum computing, semiconductors and wireless telecommunications
- Critical Minerals Partnership: Recently, India joined the US-led Minerals Security Partnership (MSP) to boost global critical energy and minerals supply chains
- Collaboration in Space: NASA to train ISRO astronauts, aiming for a joint International Space Station (ISS) mission in 2024
 - Artemis Accord: A US-led alliance seeking to facilitate international collaboration in planetary exploration and research; signed by India
 - NASA-ISRO Synthetic Aperture Radar (NISAR): For understanding changes in Earth's ecosystems and other environmental changes

Civil Nuclear Deal

- Civil Nuclear Cooperation: Bilateral civil nuclear cooperation agreement signed in October 2008

Energy & Climate Change

- Joint Clean Energy Research and Development Centre (JCERDC), 2010: To promote clean energy innovations by teams of scientists from India and the United States
- Clean Energy Agenda 2030 Partnership: Launched at the Leaders climate summit 2021
- Global Biofuel Alliance (India, Brazil and US), 2023: Aimed at facilitating cooperation and intensifying the use of sustainable biofuels, including in the transportation sector

Security

- Counter-Terrorism Cooperation Initiative, 2010: To expand collaboration on counter-terrorism, information sharing and capacity building

Four Foundational Agreements:

- General Security of Military Information Agreement (GSOMIA), 2002: Allows militaries to share intelligence gathered by them
 - ◆ Industrial Security Annex, 2019 is a part of GSOMIA
- Logistics Exchange Memorandum of Agreement (LEMOA), 2016: Both countries gain access to designated military facilities for refuelling and replenishment.
- Communication Compatibility and Security Agreement (COMCASA), 2018: A legal framework for the transfer of highly sensitive communication security equipment from the US to India
- Basic Exchange and Cooperation Agreement for Geospatial Intelligence (BECA), 2020: Allow both countries to share geospatial and satellite data with each other

In 2015, both countries issued Delhi Declaration of Friendship and adopted a Joint Strategic Vision for Asia-Pacific and the Indian Ocean Region

Popular Visa Among Indians include H-1B, L. Indian citizens set to become largest foreign student community in the US (20% growth in 2022)

Note:

Wagner Mutiny in Russia

Why in News?

Recently, the chief of **Russia's Wagner Private Military Company** staged a **short-lived Mutiny** against the country's defense establishment, pushing Russia into an **unprecedented internal security crisis**.

What is the Background?

➤ Accusations on MoD:

- The chief of the Wagner Group (Prigozhin) leveled **serious accusations against the leadership of Russia's Ministry of Defense (MoD)**, claiming corruption and incompetence.
- Wagner Group also released a video **accusing the defense leadership of ordering airstrikes** on Wagner and taking control of the Southern Military District headquarters in Rostov-on-Don.
- In an attempt to address their grievances, Wagner **forces embarked on a "march of justice" towards Moscow**, resulting in clashes and significant damage.

➤ Labeled Treason:

- The Russian President condemned the mutiny, labeling it a **"Treason"**.
- He ordered the security services to suppress the rebellion. However, he faced a dilemma due to **Wagner's past alliance and its effectiveness**.

➤ Negotiation:

- Russian President with the help of **President of Belarus** negotiated with Prigozhin. As per negotiation Prigozhin **agreeing to retreat and relocate to Belarus**.

What can be the Implications on Russia over the Wagner Events?

➤ Internal Division:

- The mutiny has exposed **internal divisions within Russia's security and military forces**. The fact that the Wagner troops were able to initiate an armed uprising and make significant advancements towards Moscow before their retreat highlights **vulnerabilities within the Russian security apparatus**.
- This could have **long-term implications and potentially encourage similar actions** in the future.

➤ Weakening Authority of President:

- The incident has also exposed the weakening authority of President Putin. Despite making promises on national television to crush the rebellion, Putin **ultimately resorted to indirect communication** and pardoning the mercenaries in exchange for their retreat.
- If the war continues without yielding any tangible results, Putin **could face increasing challenges from within** his own ranks.

➤ Currency Volatility:

- The mutiny and the resulting uncertainty led to **significant volatility in the Russian ruble exchange rate**. The currency experienced a sharp decline against the US dollar, reaching its **lowest level in 15 months**. This volatility can have broader implications for the Russian economy, including increased costs of imports, inflationary pressures, and reduced investor confidence.

➤ Future operations in Syria and Libya:

- The disbandment of the Wagner Group leaves Russia with a challenge as armed and trained **Russians remain scattered in various parts of the world**, particularly Africa and the Middle East.
- It is likely that the **group will resurface under a different name**. However, pulling out these individuals without addressing the agreements and responsibilities they had with local governments **could create complications**.

What is the Wagner Group?

- The Wagner Group also known as PMC Wagner is a Russian paramilitary organization, founded in 2014.
- Wagner at its peak had about 50,000 mercenary recruits - many of them **ex-prisoners - fighting in Ukraine**.
- The group has operated for years on battlefields in the **Middle East, Africa and Latin America**.



Note:

India US Strategic Partnership

Why in News?

The Indian Prime Minister was on a significant visit to the **United States of America**.

- The visit aimed to **strengthen the strategic partnership between the two countries** and focused on **addressing common challenges**, taking a stand on global issues, collaborating in **critical emerging technologies**, promoting **sustainable development**, and transitioning towards **clean energy**.

What are the Areas of Cooperation Highlighted During the Visit?

- **Strengthening Semiconductor Supply Chains:** Micron Technology, with support from the **India Semiconductor Mission**, will invest in a new semiconductor assembly and test facility in India.
 - Applied Materials will establish a **Semiconductor Centre for Commercialization and Innovation in India** to enhance the diversification of the semiconductor supply chain.
 - Lam Research will train **60,000 Indian engineers through its "Semiverse Solution"** to accelerate India's semiconductor education and workforce development goals.
 - **Advanced Telecommunications:** India and the US have established public-private Joint Task Forces on the development and deployment of **Open RAN systems and advanced telecoms research and development**.
 - **Bharat 6G** from India and the US Next G Alliance will co-lead the public-private research, aiming to reduce costs, enhance security, and improve the resiliency of telecommunication networks.

Note: Open RAN, also known as Open Radio Access Network, is a concept and approach to **designing and implementing radio access networks in telecommunications**. It aims to introduce greater openness, flexibility, and interoperability into traditional RAN architectures by decoupling hardware and software components and promoting multi-vendor integration.

- **NASA-ISRO Collaboration in Space:** India has signed the **Artemis Accords**, joining 26 other countries committed to **peaceful, sustainable, and transparent cooperation for space exploration**.
 - NASA will provide **advanced training to Indian Space Research Organization (ISRO) astronauts**, with the goal of a joint effort to the **International Space Station in 2024**.
 - A strategic framework for human spaceflight cooperation between **NASA and ISRO** is being developed by the end of 2023.
- **Quantum, Advanced Computing, and Artificial Intelligence:** The Joint Indo-US Quantum Coordination Mechanism has been established to facilitate joint research on **quantum technology, Artificial Intelligence (AI), and advanced wireless technologies**.
 - Joint collaboration on trustworthy and responsible AI, including **generative AI**, will promote AI education, workforce initiatives, and commercial opportunities.
 - India's leadership as **Chair of the Global Partnership on AI** was commended, and **Google's investment in Indian startups and AI research centre** was appreciated.
- **Fibre Optics Investments:** Sterlite Technologies Limited from India has invested USD 100 million in constructing a **optical fibre cable manufacturing unit near Columbia, South Carolina**, facilitating USD 150 million in annual exports of optical fiber from India.
- **Cutting-edge Research:** The US National Science Foundation has joint research collaborations with India's Department of Science and Technology.
 - A cooperative arrangement has been signed with **India's Ministry of Electronics and Information Technology** to promote emerging technologies.
- **Innovation Handshake:** The US-India Commercial Dialogue will launch an **"Innovation Handshake"** to connect the startup ecosystems of both countries, supporting the **US-India Initiative on Critical and Emerging Technology (iCET)**.
- **Critical Minerals Partnership:** India has become the newest partner of the US-led Minerals Security Partnership (MSP), focused on developing diverse and sustainable critical energy minerals supply chains globally.
 - Epsilon Carbon Limited, an Indian company, will invest in a greenfield **electric vehicle battery component factory** in the US.

Note:



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- **Defense Partnership:** A groundbreaking proposal has been welcomed to co-produce **GE's F414 combat aircraft engines in India**, allowing for greater transfer of US jet engine technology.
 - India intends to procure **armed MQ-9B SeaGuardian UAVs** from General Atomics to enhance intelligence, surveillance, and reconnaissance capabilities.
 - Agreements have been reached for **service and repair of US Navy ships at Indian shipyards, fostering closer cooperation.**
 - **Master Ship Repair Agreements** with Indian shipyards will expedite contracting processes for mid-voyage and emergent repair.
 - The **India-US Defence Acceleration Ecosystem (INDUS-X)** has been inaugurated, fostering **joint innovation on defence technologies** and integrating India's private sector defence industry with the US defence sector.
 - The adoption of a **Defense Industrial Cooperation Roadmap** will provide policy direction for defence industries.
 - The roadmap aims to enable co-production of advanced defence systems and collaborative research, testing, and prototyping.
- **Cooperation in the Indo-Pacific:** The US will join the **Indo-Pacific Oceans Initiative**, promoting a **safe, secure, and stable maritime domain and regional coordination.**
 - India will continue to participate as an **observer in the Partners in the Blue Pacific.**
 - A **Indian Ocean Dialogue** will be held, bringing together experts and stakeholders to enhance regional coordination.
- **Strengthening and Reforming the Multilateral System:** Both countries supported a **comprehensive UN reform agenda**, including expansion of the **UN Security Council's permanent and non-permanent membership.**
 - The US endorsed **India's permanent membership on a reformed UN Security Council** and India's candidature as a **non-permanent member for the 2028-29 term.**
- **Initiatives on Healthcare:** Collaboration between US and Indian scientists will be fostered through grants to develop **AI-enabled digital pathology platforms and AI-based automated radiotherapy treatment for cancer.**
 - Agreements will be signed to further research on diabetes, and a **US-India Cancer Dialogue** will be hosted to accelerate progress against cancer.
- **Digital Public Infrastructure (DPI) for Inclusive Development:**
 - Recognizing the potential of **DPI approaches**, both countries aim to provide **global leadership in promoting inclusive development, competitive markets, and protecting individual rights.**
 - Collaboration will be pursued to develop and deploy robust DPIs, with safeguards for privacy, data security, and intellectual property.
 - Exploring the **establishment of an India-US Global Digital Development Partnership** to enable DPI development and deployment in developing countries.
- **Strengthening India-US Trade and Investment Partnership:**
 - Bilateral trade exceeds **USD 191 billion in 2022**, with a focus on greater engagement and technical cooperation in emerging technologies, clean energy, and pharmaceuticals.
 - **Harmonisation of standards and regulations**, lowering barriers to trade and investment, and promoting an innovative digital economy.

Note:

- India and US have four foundational defence agreements:
 - **Basic Exchange and Cooperation Agreement for Geospatial Intelligence (BECA).**
 - **General Security of Military Information Agreement (GSOMIA).**
 - **Logistics Exchange Memorandum of Agreement (LEMOA).**
 - **Communication Compatibility and Security Agreement (COMCASA).**
- **Fighting Terror and Drugs:** The US and India stand united in countering **global terrorism**, condemning terrorism and violent extremism in all forms.
 - Emphasis is placed on **taking action against UN-listed terrorist groups and urging Pakistan to prevent the use of its territory for launching attacks.**
 - A **counternarcotics framework** will be developed to disrupt the production and trafficking of illicit drugs, including synthetic drugs and precursors.

Note:



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- **Resolution of outstanding WTO disputes and market access issues**, with further engagement through the **India-US Trade Policy Forum**.
- Exploring **restoration of India's status under the US Generalised System of Preferences program** and recognition as a **Trade Agreements Act-designated country**.
- **Sustainable Development:** Collaborative efforts between India and the US will continue to achieve **national climate and energy goals**, including co-leading the **Hydrogen Breakthrough Agenda**.
 - Innovative investment platforms will be **created to attract international private finance for renewable energy**, battery storage, and emerging green technology projects in India.
 - The US Agency for International Development will support Indian Railways' target to become a **"net-zero" carbon emitter by 2030**.
 - Initiatives are in place to **decarbonize the transportation sector and promote biofuels**.
- **People-Centric Efforts:**
 - Initiatives have been taken to **simplify visa renewals for certain petition-based temporary work visas**, benefiting Indian nationals and reducing the need to leave the country for renewal.
 - Plans are underway to **open new consulates in Bengaluru and Ahmedabad**, fostering closer diplomatic ties.
 - Student exchanges and scholarships have been enhanced, with a record **number of visas issued to Indian students**, and increased opportunities for US undergraduate students to study or intern in India.
 - The Leaders welcomed the **establishment of the Tamil Studies Chair at the University of Houston** and **reinstating the Vivekananda Chair at the University of Chicago** to further research and teaching of India's history and culture.

India-Egypt Relations

Why in News?

Recently, the Indian Prime Minister (PM) has visited Egypt for the **first time since 1997** to discuss bilateral relations between **India and Egypt**.

- The Government of Egypt bestowed the highest honor of the land — the **Order of the Nile** — on the PM.

Note: Instituted in 1915, the '**Order of the Nile**' is conferred upon heads of states, crown princes, and vice presidents who offer Egypt or humanity invaluable services.



What are the Key Highlights of the Visit?

- **Strategic Partnership Agreement:** The visit marked the signing of a strategic partnership agreement between India and Egypt, which is a significant milestone in the bilateral relationship between the two countries. The strategic partnership will have **broadly four elements**:
 - Political
 - Defense and Security
 - Economic engagement
 - Scientific and academic collaboration.
 - Cultural and people-to-people contact
- **Memoranda of Understanding (MoUs):** Three MoUs were signed between India and Egypt in the fields of agriculture, archaeology and antiquities, and competition law, aiming to enhance **cooperation in these areas**.
- **Bilateral Discussions:** Indian PM and Egypt's President discussed various topics, including **multilateral cooperation at the G-20**, food and energy security, **Climate Change**, and **Clean Energy** collaboration.
- **India Unit in Egyptian Cabinet:** Indian PM met with the India Unit, a group of high-level ministers constituted by Egyptian President in Egyptian Cabinet in March, 2023 to enhance India-Egypt relations.
- **Commonwealth War Grave Cemetery:** Indian PM paid homage to over **4,300 Indian soldiers who lost their lives in Egypt** and Aden during **World War I** at the Heliopolis Commonwealth War Grave Cemetery.

Note:



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- **Egypt's Participation in G-20 Summit:** Egypt was designated as a "guest country" at the upcoming G-20 summit scheduled to be held in September, further strengthening bilateral ties between India and Egypt.
- **Al-Hakim Mosque:** Indian Prime Minister visited the **11th-century Al-Hakim Mosque** in Cairo, which was restored by India's Dawoodi Bohra community.
 - The mosque was built in 1012 and is the fourth oldest mosque in Cairo. The Dawoodi Bohra **Muslims are known for their adherence to the Fatimi Ismaili Tayyibi school of thought** and originated from Egypt before establishing a presence in India in the 11th century.

How Has Been the India-Egypt Relations?

- **History:**
 - The history of contact between **India and Egypt, two of the world's oldest civilizations**, can be traced back to at least the time of **Emperor Ashoka**.
 - Ashoka's edicts refer to his relations with **Egypt under Ptolemy-II**.
 - In modern times, **Mahatma Gandhi** and the Egyptian revolutionary **Saad Zaghloul** shared the common goal of **independence** from British colonial rule.
 - The joint announcement of establishment of diplomatic relations at Ambassadorial level was **made on 18th August 1947**.
 - India and Egypt signed a friendship treaty in 1955. In 1961, India and Egypt along with Yugoslavia, Indonesia and Ghana established the **Non-Aligned Movement (NAM)**.
 - In 2016, the joint statement between **India and Egypt identified political-security cooperation, economic engagement and scientific collaboration, and cultural and people-people ties as the basis of a new partnership for a new era**.
- **Bilateral Trade:**
 - India's trade with Egypt stood at USD 6,061 million in 2022-23, having **declined by 17% over the previous year**.
 - Nearly a third of it was petroleum related.
 - India was **Egypt's sixth largest trading partner**, while Egypt was India's 38th in 2022-23.
 - Indian investments in **Egypt are spread over 50 projects totalling USD 3.15 billion**. Egypt has invested **USD 37 million in India**.

- **Defense Cooperation:**
 - The two Air Forces collaborated on the **development of fighter aircraft in the 1960s**, and Indian pilots trained their Egyptian counterparts from the 1960s until the mid-1980s.
 - Both the **Indian Air Force (IAF)** and **Egyptian air force fly the French Rafale fighter jets**.
 - In 2022, a pact was signed between the two countries that have **decided to also participate in exercises** and cooperate in training.
 - The first joint special forces exercise between the Indian Army and the Egyptian Army, "Exercise Cyclone-I" was completed in January 2023 in Jaisalmer, Rajasthan.
- **Cultural Relations:**
 - The Maulana Azad Centre for Indian Culture (MACIC) was established in Cairo in 1992. The centre has been promoting cultural cooperation between the two countries.

What are the Opportunities and Challenges for India?

- **Opportunities:**
 - **Combat Religious Extremism:** India aims to combat **Religious Extremism by supporting moderate countries** in the region and promoting social reforms.
 - India has identified it as a key player in the **Gulf Region** since it maintains a moderate stance on religion, enjoys strong relations with the **UAE (United Arab Emirates)** and Saudi Arabia (which have made substantial investments in Egypt).
 - **Strategically Located:** Egypt holds a strategically significant position with the **Suez Canal, through which 12% of global trade passes**.
 - By enhancing bilateral relations with Egypt, **India hopes to advance its goals in the region**.
 - **Indian Investment:** Egypt seeks investments in infrastructure — Metro projects in Cairo and Alexandria, a Suez Canal economic zone, a second channel of the Suez Canal, and a new administrative capital in a Cairo suburb.
 - More than **50 Indian companies have invested more than USD 3.15 billion in Egypt**.

Note:

- **Similar Socio-Economic Conditions:** Egypt is a large country (population 105 million) and economy (USD 378 billion). It is politically stable, and its **socio-economic conditions are quite similar to India.**
 - Egypt's largest imports are refined petroleum, wheat (world's largest importer), cars, corn and pharmaceuticals — all of which **India has the potential to supply.**
- **Infrastructure Development:** Moreover, the Egyptian government has an ambitious infrastructure development agenda, with 49 mega projects including the construction of a New Cairo (USD 58 billion), a USD 25 billion nuclear power plant and a USD 23 billion high-speed rail network.
 - During 2015-19, Egypt was the world's third-largest arms importer. These present opportunities for India.
- **Challenges:**
 - **Economic Crisis in Egypt:** The huge financial commitments of the Egyptian economy have **coincided with a static economy**, pandemic, global slowdown and the **Ukraine conflict.**
 - Consequently, tourism has dropped and imports such as cereals have become costly. Annual **Inflation** is above 30% and the currency has lost more than half its value since February 2022.
 - **Abysmal Debt and Forex:** Egypt's foreign debt is over USD 163 billion (43% of the GDP) and its net foreign assets are minus USD 24.1 billion.
 - The acute forex situation compelled the government to issue in January 2023 an order for the **postponement of projects with a large foreign currency** component and cuts to non-essential spending.
 - **China's Growing Influence:** India's concerns regarding China in Egypt revolve around China's growing economic influence, **its expanding presence in strategic areas**, its bilateral trade agreements, which can have potential implications for **India's regional interests and security.**
 - China's bilateral trade with Egypt is currently at USD 15 billion, double that of **India's USD 7.26 billion in 2021-22.**
 - During the past eight years, the President of Egypt has traveled to China seven times to lure Chinese investments.

India's Jet Engine Deal with the US

Why in News?

Recently, India has announced a significant agreement between the American multinational corporation **General Electric (GE)** and **Hindustan Aeronautics Limited (HAL)**, during Indian PM's state visit to the US. The deal involves the transfer of critical jet engine technologies and the manufacturing of **GE's F414 engine** for India's **indigenous Light Combat Aircraft (LCA) Tejas Mk2.**

- This development marks a crucial milestone in **India's pursuit of advanced combat jet engine technology.**

Note:

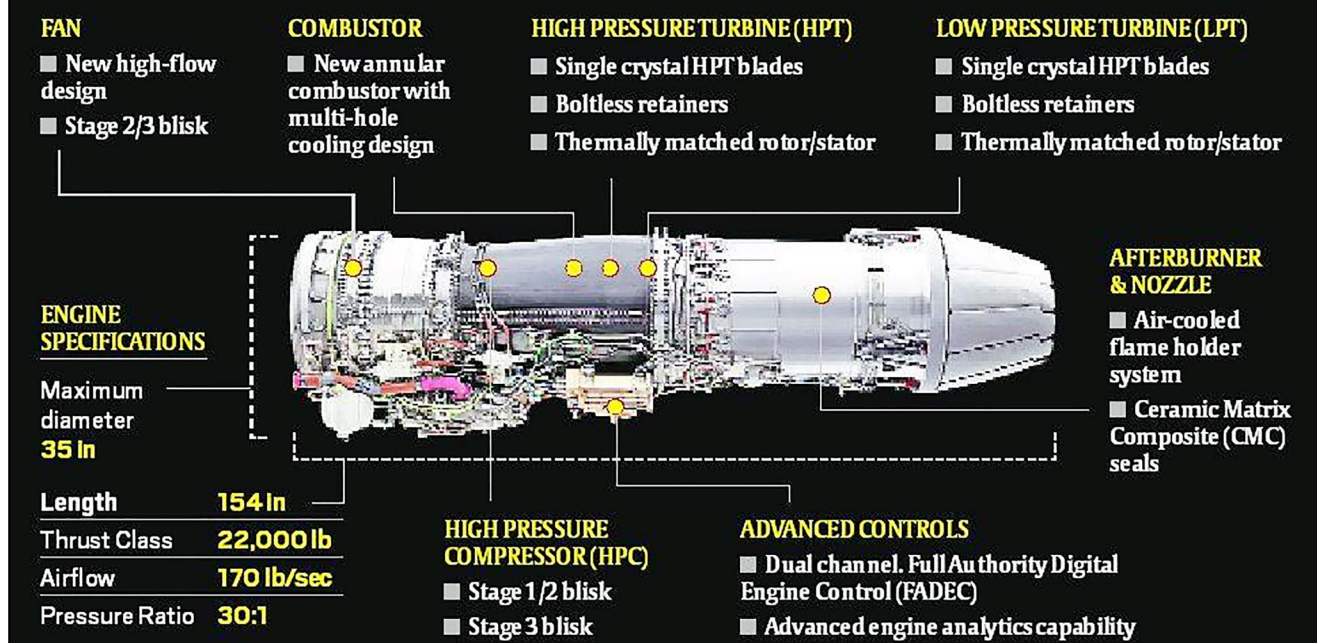
- The **India-US Defence Acceleration Ecosystem (INDUS-X)** was also launched during the ongoing visit of the PM.
- INDUS-X is meant as a platform for Indian and U.S. **start-ups and tech companies** to collaborate for the co-development and co-production of advanced technologies.

What is GE's F414 engine?

- **About:**
 - GE's F414 engine is a turbofan engine used by the US Navy for over 30 years.
 - It is equipped with a **dual-channel full authority digital engine control (FADEC)**, a **six-stage high-pressure compressor**, an advanced **high-pressure turbine**, and a "fuel-draulic" system for nozzle area control.
 - It offers **exceptional throttle response, excellent afterburner light and stability, and unrestricted engine performance** when required.
 - The F414 engine has powered military aircraft in eight nations, making it a **trusted choice for modern fighter jets.**
- **India's Engine Requirements:**
 - For India, the F414 engine holds great significance, particularly in the context of the **LCA Tejas Mk2.**
 - The **Aeronautical Development Agency (ADA)** of the **DRDO** has selected the India-specific version of the engine, known as **F414-INS6**, for the **LCA Tejas Mk2.**

Note:

INSIDE THE F414 MILITARY AIRCRAFT ENGINE



- This strategic decision reflects India's aim to bolster its indigenous defence capabilities and reduce dependence on foreign suppliers.
 - Furthermore, there are prospects of utilizing F414 engines for the **Advanced Medium Combat Aircraft (AMCA)**, India's ambitious fifth-generation fighter aircraft.

What is

LCA Tejas Mk2?

- The LCA Tejas Mk2 is an upgraded version of the indigenous fighter aircraft developed in India.
- It has the capability to carry **eight Beyond-Visual-Range (BVR) missiles** simultaneously and integrate both **native and advanced weapons** from other countries.
- The LCA Mk2 offers improved range and mission endurance compared to its predecessor, with a **mission endurance of 120 minutes, as opposed to 57 minutes for the LCA Tejas Mk1.**
- It is intended to serve as a replacement for the Jaguars, MiG-29s, and Mirage 2000s as they retire in the coming decade. Manufacturing has already begun, and the aircraft is expected to be rolled out by 2024.

Why is the India-US Jet Engine Deal Significant?

- **Self-reliance in Critical Technologies:**
 - Manufacturing engines for combat aircraft requires advanced technology and metallurgy, which only **US, Russia, UK and France have mastered.**
 - India, despite its push for self-reliance in **critical technologies**, including cryogenic rocket engines, **has not been able to join this list.**
 - The countries that have the technology to manufacture advanced engines for fighter aircraft have been **traditionally unwilling to share** them which is also why the deal is pathbreaking.
 - **A Significant Component of iCET:**
 - The agreement for the transfer of technology was discussed in the talks between India's Defence Minister and the US Secretary of Defence earlier in June 2023 and was a key highlight of **India's National Security Advisor's meeting with his US counterpart** when the **US-India iCET** was operationalized.
- **Development Efforts by DRDO:**
 - The DRDO's **Gas Turbine Research Establishment (GTRE)** initiated the development of the GTX-37 engine for the LCA, followed by the ambitious Kaveri engine project in 1989.

Note:



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- Despite the development of 9 full prototype engines and 4 core engines and extensive testing, the **engines did not meet the requirements for fighter aircraft** making this deal crucial for its defence capabilities.

➤ **End of Technology Denial Regime:**

- This pact finally lays to rest what former PM of India (in 2008) had described in as the “**technology denial regime**” imposed on India by the West, led by the US.
 - The **Nuclear Suppliers’ Group’s** waiver to the Indo-US nuclear deal marked the end of India’s decades long isolation from the nuclear technology.
- This jet engine technology transfer agreement is **another one of the important milestones in this journey**.

What are India’s

Recent Developments in Defence Sector?

➤ **India’s Indigenous Developments:**

- Successful testing of indigenous weapons and systems, including:
 - **Rustom-2 drone**
 - **Light Combat Helicopter**
 - **Man Portable Anti-Tank Guided Missile**
 - **Agni-5 intercontinental ballistic missile**
 - **Advanced Medium Combat Aircraft.**
- Launch and commissioning of indigenous naval vessels, including:
 - **INS Karanj submarine**
 - **OPV Vijaya patrol vessel**
 - **INS Dhruv nuclear missile tracking ship**
 - **INS Himgiri stealth frigate**

➤ **India’s Defence Collaboration with Other Countries:**

- Procurement and signing of contracts for defence equipment and platforms from foreign countries, such as:
 - **Barak missiles and Precision Guided Munitions from Israel**
 - **S-400 air defence systems from Russia**
 - **Rafale fighter jets from France**
- Aside from GE, India has been talking to other global jet engine makers for technology transfer such as **Safran SA of France** and **Rolls-Royce of the United Kingdom** for the **AMCA**.

China Blocks Proposal to Blacklist Pakistan-Based Terrorist

Why in News?

China’s recent move to block a **proposal at the United Nations (UN)** to designate a **Pakistan-based LeT terrorist as a global terrorist** has drawn attention and raised concerns among the international community.

- In September 2022, **China had put a hold** on the proposal to designate the terrorist at the UN.

What is the Concern Raised Regarding China’s Decision to Block the Proposal?

- The **blocked proposal**, brought forward by India and the United States, aimed to blacklist a wanted individual for his involvement in the 26/11 Mumbai terror attacks, under the **1267 Al Qaeda Sanctions Committee** of the **UN Security Council**.
- This is **not the first time China has blocked efforts** to blacklist Pakistan-based terrorists under the **UN Security Council’s sanctions committee**.
 - China has consistently placed holds on listings that target individuals associated with terrorism in Pakistan including in **2009, 2016, 2017**.
- China’s actions have **raised concerns among countries that seek to combat terrorism globally**, as it appears to prioritise its relationship with Pakistan over international security cooperation.
 - It also highlights the challenges of achieving consensus within the **UN Security Council** on sensitive issues related to terrorism.

What is the 1267 Al Qaeda Sanctions Committee?

- The committee is part of the **UN Security Council** and its job is to implement international sanctions against terrorists.
 - The other two committees with similar roles are the **Counter-Terrorism Committee** and the **Security Council Committee**.
- The **Al Qaeda committee** was established as the **Al-Qaida and Taliban Sanctions Committee** on **October 15, 1999**, after Security Council Resolution 1267 designated al-Qaeda and the Taliban as terrorist bodies.
 - In 2011, a **separate committee was formed for the Taliban**.

Note:



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- Under the **Committee regime**, any UN member state can **propose the name of an individual or group to be designated as a terrorist**.
- Decisions are made by consensus in the 1267 Sanctions Committee, which comprises all members of the UNSC.

- A committee member can block blacklisting proposals by raising objections or applying a **"technical hold"** on a proposal.
- An individual or entity listed as a terrorist is subjected to an **assets freeze, travel ban, and arms embargo**.

UN Security Council (UNSC)

The UN Charter vests the primary responsibility for maintaining international peace and security to the UNSC

About

One of the **6 principal organs** of UN; established in **1945** by UN Charter

Headquarters

New York City

First Session

17 January 1946 at Church House, Westminster, London

Membership

- 15 members - 5 Permanent Members (P5), 10 Non-Permanent Members elected for two-year terms (5 elected each year)
- P5 - the US, the UK, Russia, France and China

Presidency

- Rotates every month among the 15 members
- India's Presidency for year 2022 - December

Voting Powers

- 1 member = 1 vote
- P5 have **veto power**
- Members of UN sans membership of UNSC participate without vote

UNSC Committees/Resolutions

Terrorism

- Resolution 1373 (Counter Terrorism Committee)
- Resolution 1267 (Da'esh and Al Qaeda Committee)

Non-Proliferation Committee

- Resolution 1540 (against nuclear, chemical and biological weapons)

India and UNSC

- Served **7 times** as non-permanent member; elected for the **8th time** for 2021-22; **advocates for a permanent seat**
- Arguments for a permanent seat:
 - **43 peacekeeping missions**
 - Active participation in formulating Human Rights Declaration (UDHR)
 - India's **population, territorial size, GDP, economic potential, cultural diversity, political system** etc.



G4

Group of 4 countries (Brazil, Germany, India and Japan) which advocate each other's bids for permanent seats in the UNSC

Uniting for Consensus (UfC) Movement

- Informally known as the **Coffee Club**
- Countries **oppose the expansion Permanent Seats** of UNSC
- **Prime movers of the club** - Italy, Spain, Australia, Canada, South Korea, Argentina and Pakistan
- Italy and Spain are opposed to Germany's bid; Pakistan - India's bid; Argentina - Brazil's bid and Australia - Japan's bid

Major Challenges in UNSC

- Usual UN rules don't apply to UNSC deliberations; **no records of meetings kept**
- Powerplay in UNSC; **anachronistic veto powers** of P5
- **Deep polarisation** among P5; frequent divisions end up blocking key decisions
- **Inadequate representation** of many regions among of the world



U.S.-India initiative on Critical and Emerging Technology

Why in News?

Recently, India and the United States have taken a

significant step towards strengthening their strategic partnership and driving technology and defense cooperation. Under the Initiative on Critical and Emerging Technologies (ICET), the two nations have unveiled a roadmap for enhanced collaboration in high-technology areas.

Note:

- The initiative focuses on addressing regulatory barriers, aligning export controls, and fostering deeper cooperation in critical and emerging fields.

What is the iCET?

- **About:**
 - The iCET was announced by India and the US in May 2022 and was officially launched in **January 2023** and is being run by the **National Security Council of both countries**.
 - Under iCET, both countries have identified six areas of cooperation which would include co-development and co-production, that would **gradually be expanded to QUAD, then to NATO**, followed by Europe and the rest of the world.
 - Under iCET, India is ready to **share its core technologies** with the US and expects Washington to do the same.
 - It aims to promote collaboration in critical and emerging technology areas, **including AI, quantum computing, semiconductors, and wireless telecommunication**.
- **Focus Areas of the Initiative:**
 - AI research agency partnership.
 - Defense industrial cooperation, defense technological cooperation, and defense startups.
 - Innovation Ecosystems.
 - Semiconductor ecosystem development.
 - Cooperation on human spaceflight.
 - Advancement in **5G and 6G technologies**, and adoption of **OpenRAN network technology** in India.
- **Progress Made So Far:**
 - Key achievements include the **Quantum Coordination Mechanism**, public-private dialogue on telecommunication, important exchanges on AI and space, MoU on establishing a **semiconductor supply chain**, and conclusion of a roadmap for defense industrial cooperation.
 - The two countries are close to finalizing a **mega jet engine deal**, and a new initiative called the **India-U.S. Defence Acceleration Ecosystem (INDUS-X)** is set to be launched.
 - Strategic Trade Dialogue has been established to address regulatory barriers and review export control norms.

How have been India's Relations with the US?

- **Economic Relations:**
 - The **U.S.** has emerged as **India's biggest trading partner in 2022-23** on account of increasing economic ties between the two countries.
 - The bilateral trade between India and the U.S. has increased by 7.65% to USD 128.55 in 2022-23 as against USD 119.5 billion in 2021-22.
 - Exports to the U.S. rose by 2.81% to USD 78.31 billion in 2022-23 as against USD 76.18 billion in 2021-22, while imports grew by about 16% to USD 50.24 billion.
- **International Cooperations:**
 - India and the United States cooperate closely at multilateral organizations, including the **United Nations, G-20, Association of Southeast Asian Nations (ASEAN) Regional Forum, International Monetary Fund, World Bank, and World Trade Organization**.
 - The United States welcomed India joining the UN Security Council in 2021 for a two-year term and supports a reformed UN Security Council that includes India as a permanent member.
 - Together with Australia and Japan, the United States and India convene as the **Quad** to promote a free and open Indo-Pacific and provide tangible benefits to the region.
 - India is also one of twelve countries partnering with the United States on the **Indo-Pacific Economic Framework for Prosperity (IPEF)**.
 - India is a member of the **Indian Ocean Rim Association (IORA)**, at which the United States is a dialogue partner.
 - In 2021, the United States joined the International Solar Alliance headquartered in India, and in 2022 the **United States Agency for International Development (USAID)**.

What is OpenRAN Network Technology?

- **About:**
 - It is a non-proprietary version of the **Radio Access Network (RAN)** system.
 - A RAN is a major component of a wireless telecommunications system that **connects individual devices to other parts of a network** through a radio link.

Note:



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- Allows interoperability between cellular network equipment from different vendors.

➤ **Advantages of OpenRAN Network Technology:**

- Creates a more open and flexible RAN architecture.
- Based on open interfaces and virtualization.
- Supported by industry-wide standards.
- Cost reduction.
- Increased competition.
- Faster innovation.

➤ **Applications of OpenRAN Network Technology:**

- Supporting 5G and 6G networks.
- Enhancing network performance and security.
- Enabling new services and capabilities.
- Bridging the digital divide.

Oslo Forum and Afghan Peace Talks

Why in News?

Recently, for the first time, India participated in Norway's Oslo forum organized for peace talks on Afghanistan.

- **Oslo Forum** is the leading series of retreats for international mediators and peacemakers.
- Earlier India had participated in the **Moscow Format dialogue (2022)** and in **Doha dialogue (2020)** for the peace talks.

What is OSLO Forum?

- The Oslo Forum (started in 2003) is a series of retreats for international conflict mediators, high-level decision-makers, and other peace process actors.
- It provides a discreet and informal space to reflect on current mediation practice, collaborate across institutional and conceptual divides and advance negotiations.
- The Forum is **co-hosted by the Royal Norwegian Ministry of Foreign Affairs and the Centre for Humanitarian Dialogue (HD)**.
 - The Centre for Humanitarian Dialogue (HD) is a private diplomacy organization that specializes in mediation and dialogue processes to prevent and resolve armed conflicts.

- **HD was Established in 1999, based in Geneva, Switzerland,** and operates globally.

➤ All discussions take place under the **Chatham House Rule. Participation is by invitation only.**

- Chatham House (UK) is an independent policy institute and a forum for debate and dialogue.
- When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.



What is the Present approach of India towards Afghanistan?

- India has not recognized the Taliban regime but has engaged with it on humanitarian and security issues.
- India's main objectives in Afghanistan are to protect its security interest and to prevent any terrorist threats from Afghan soil.
- India has cemented its position as a major developmental partner of Afghanistan and has also earned the goodwill of Afghans.
- It does not project a narrowly defined strategic ambition with its investment in Afghanistan; rather, it seeks to take part in effectively creating a conducive environment for growth for the Afghans.
- India has also participated in regional and international forums to discuss the situation in Afghanistan and to coordinate efforts for peace and stability.

Note:



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What is the significance of Afghanistan for India?

- **Gateway to the Central Asia:** Afghanistan is a gateway to the **Central Asian Republics (CARs)**, which are rich in natural resources and potential markets for Indian goods and services.
- **Counterbalance to Pakistan and China:** A stable and friendly Afghanistan can help India contain the threats of terrorism, extremism and radicalism emanating from Pakistan.
- **Partner in India's Soft Power assistance:** India has invested over USD3 billion in various projects in Afghanistan, such as roads, dams, schools, hospitals, parliament building, etc.
 - India also provides scholarships, training, cultural exchanges and humanitarian aid to Afghanistan.
- **Cultural & Historical ties:** The two countries share a common heritage of Buddhism, Hinduism, Sufism and the Mughal empire. Many Afghan leaders, including former President Hamid Karzai, have studied in India.

How has the Taliban takeover affected India's interests?

- **Security Risks:**
 - The Taliban is seen as a proxy for Pakistan and a supporter of anti-India terrorist groups like Jaish-e-Muhammad and Lashkar-e-Taiba.
 - The Taliban is also close to China, which is India's strategic rival in the region.
- **Influence and Leverage:**
 - India had no direct engagement with the Taliban and had invested heavily in the previous government and its institutions.

- India also lost its access to the Central Asian Republics through Afghanistan, which was a key part of its connectivity and energy projects.

➤ Trade and Development:

- The Taliban has stopped the movement of cargo through Pakistan and created uncertainty over the future of India's aid and projects in Afghanistan.
- India had contributed over \$3 billion in various sectors such as infrastructure, health, education, agriculture, etc. in Afghanistan.

➤ Humanitarian Crisis:

- Thousands of Afghans who have worked with India or have family ties with India are seeking refuge and protection from the Taliban's repression.
- India launched an evacuation mission called **Operation Devi Shakti** to bring back its citizens and Afghan partners from Kabul.

How should India handle the situation?

- **Maintain a Balanced Approach:** India should adopt a balanced approach in its dealings with Afghanistan, avoiding excessive alignment or confrontation. While **expressing concerns about human rights, terrorism, and the treatment of minorities**,
 - India can also explore areas of common interest such as trade, cultural exchange, and regional connectivity.
- **Support Afghan Reconciliation:** India can **actively support efforts for an inclusive and representative government** in Afghanistan. This involves advocating for an inclusive political process that accommodates the interests of all ethnic and religious groups in the country.
- **Engage with Regional Players:** India should engage with regional players, particularly neighboring countries, to coordinate their efforts and ensure a collective approach to stability in Afghanistan.
 - This can involve collaborating with countries such as Iran, Russia, and Central Asian nations to address common concerns and promote stability in the region.
- **Focus on Development Assistance:** India has been a significant contributor to Afghanistan's development, providing infrastructure projects, education, and humanitarian aid.

Note:



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- Despite the Taliban takeover, India could continue supporting development initiatives that benefit the Afghan people directly, such as infrastructure development, healthcare, education, and capacity building.
- **Strengthen International Partnerships:** India should work closely with international partners, including

the United States, European Union, United Nations, and regional organizations like the **South Asian Association for Regional Cooperation (SAARC)**, to collectively address the evolving situation in Afghanistan. Collaborative efforts can help shape a more stable and secure environment in the country.

What are Some previous efforts made by India in engaging with Taliban?

- In 2017, the launch of Moscow dialogue brought together representatives from Afghanistan, China, India and others. The goal of the dialogue is to facilitate the reconciliation process in Afghanistan and **to promote regional cooperation on security and economic issues.**
 - The Moscow Dialogue has been held several times since its inception. The most recent meeting was held in February 2023.
- In 2020, **India participated in the intra-Afghan peace talks** taking place in Doha via video link. This was seen as a significant step forward in India's engagement with the Taliban.
- In August 2021, two weeks after the Taliban took control of Kabul, India held its first publicly acknowledged meeting with Taliban representatives in Doha. **The meeting was described as "exploratory" and focused on humanitarian issues.**
 - In June 2022, a **team of Indian officials visited Kabul to discuss bilateral ties and humanitarian aid with the Taliban.** This was the first such visit by Indian officials since the Taliban took power.

Note:

Social Issues

Highlights

- India Removed from the Report on Children and Armed Conflict
- Medicines Patent Pool Agreement for Leukaemia
- UNDP and DAY-NULM for Women Entrepreneurs
- Adoption in India
- Global Gender Gap Report 2023: WEF
- Anxiety Disorders
- Global Trends: Forced Displacement in 2022
- Rape Crimes
- One Nation One Anganwadi Program
- Lingering Health Effects of Bhopal Gas Tragedy

India Removed from the Report on Children and Armed Conflict

Why in News?

First time since 2010, the **United Nations Secretary-General** has removed India from the **2023 report on Children and Armed Conflict** in view of measures taken by the **Indian government to protect children**.

- India was **previously accused of recruiting and using boys in armed groups in Jammu and Kashmir (J&K)**. In 2022, a higher number of violations against children were confirmed in J&K.

What is a Report on Children and Armed Conflict (CAAC)?

- **Background:**
 - 25 years ago, in December 1996, the **UN General Assembly (UNGA)** took the unprecedented decision to create a mandate to protect children from hostilities and **adopted resolution 51/77 which created the CAAC mandate**.
 - **51/77 resolution recommended** that the **Secretary-General appoint for a period of three years**, a Special Representative on the impact of armed conflict on children.
- **Objective:**
 - Strengthen the **protection of children affected by armed conflict**, raised awareness, promote the collection of information about the plight of children affected by war and **foster international cooperation to improve their protection**.

- The report also **mentioned the detention, killing, and injuring of children by security forces**.

Recent Observation:

- Among the various types of violations, **the highest numbers were reported for the killing of 2,985 children and the maiming (wound or injured) of 5,655 children, totaling 8,631 affected children**.
- This was followed by the recruitment and use of 7,622 children and the abduction of 3,985 children. Additionally, **children were detained either for their actual or alleged association with armed groups (2,496)**, including those recognised as terrorist groups by the UN or for reasons related to national security.
- Countries **recording the highest number of violations were** the Democratic Republic of the Congo (DRC), Israel, the State of Palestine, Somalia, Syria, Ukraine, Afghanistan, and Yemen.

What are the Steps Taken by the Indian Government to Protect Children?

- In J&K, **many systems were lacking or ineffective in the past** including the **Juvenile Justice Act, 2015** was not enforced, and **the juvenile homes in India were not operating effectively**.
- However, **measures have been taken to address these issues, including the establishment of infrastructure such as Child Welfare Committees, Juvenile Justice Boards, and Child Care Homes under the JJ Act, 2015**.

Note:

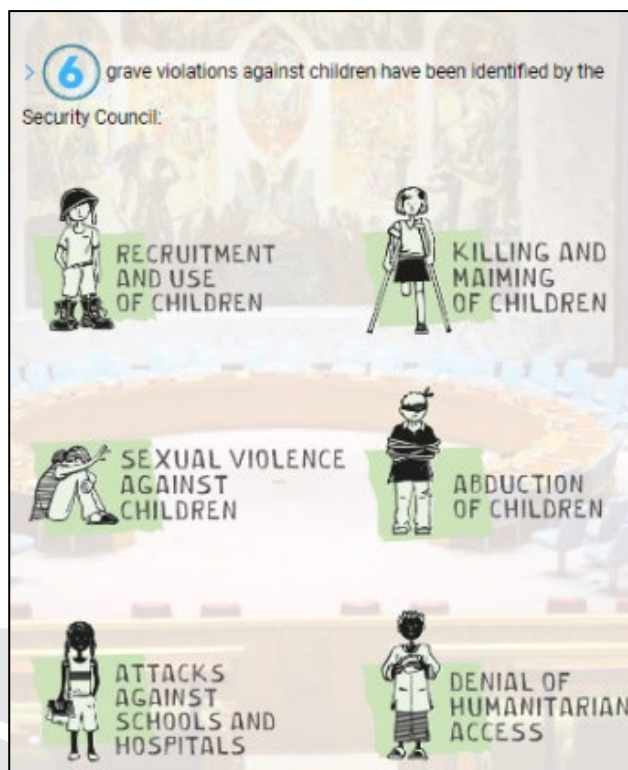


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- Several measures recommended by the UN have **already been implemented or are currently underway in India**. Training programs for security forces on protecting children have been conducted, and the **use of pellet guns has been suspended**.
 - Additionally, the **Juvenile Justice Act and the Protection of Children from Sexual Offences (POCSO) Act, 2012** are being actively enforced.
- The implementation of **legal and administrative frameworks for safeguarding children and the improved accessibility to child protection services** in Chhattisgarh, Assam, Jharkhand, Odisha, and J&K **were also appreciated by the UNGA**.
 - Furthermore, **progress was acknowledged in establishing a J&K Commission for the Protection of Child Rights**.

What are the Related Global Conventions?

- The recruitment or use of children below the age of 15 as soldiers is prohibited by both the **UN Convention on the Rights of the Child (CRC)** and the additional protocols to the **Geneva Conventions**.
 - The CRC **says childhood is separate from adulthood, and lasts until 18**; it is a special, protected time, in which **children must be allowed to grow, learn, play, develop and flourish with dignity**.
 - The Geneva Conventions and their Additional Protocols form the core of international humanitarian law, which **regulates the conduct of armed conflict and seeks to limit its effects**. They protect people **not taking part in hostilities and those who are no longer doing so**.
- The Optional Protocol to the CRC on the involvement of children in armed conflict further **prohibits kids under the age 18 from being compulsorily recruited into state or non-state armed forces** or directly engaging in hostilities.
 - Optional Protocols to human rights **treaties are treaties in their own right, and are open to signature, accession or ratification by countries who are party to the main treaty**.
 - Recruiting Child Soldiers is also **considered a war crime under the Rome Statute of the International Criminal Court (ICC)**.
 - Also, the UN has **identified the recruitment and use of child soldiers as among six "grave violations"**. Other Five violations are:



Note:

- India is a party to the **CRC and acceded to Optional Protocol in November 2005**. The Constitution encompasses **most rights included in the CRC as Fundamental Rights and Directive Principles of State Policy (DPSP)**.
 - **Article 39 (f)** states that children are given **opportunities and facilities to develop in a healthy manner** and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment.
- The **Indian Penal Code (IPC)** criminalises the **recruitment or use in hostilities of persons under-18 years** by state armed forces or non-state armed groups.
 - Adults of age over 18 years **are recruited in the Central Armed Police Forces (CAPF)**.

What is the Impact of Armed Conflict on Children?

- **Killing and Maiming:** Children are often directly targeted in conflicts, resulting in the loss of life and severe injuries. This includes **incidents of intentional killing and acts of violence** that cause physical harm or disabilities.

Note:

- **Recruitment and Use:** Armed groups exploit children by forcibly recruiting or coercing them into participating in hostilities. Children **may be used as combatants, messengers, spies, or for other support roles.**
- **Abduction and Forced Displacement:** Children are frequently subjected to abduction, where they are forcefully taken away from their families. **Armed conflicts also lead to mass displacement,** forcing children to flee their homes, schools, and communities, often experiencing trauma and separation from their families.
- **Sexual Violence and Exploitation:** Conflict situations increase the risk of **sexual violence and exploitation of children.** They become **vulnerable to rape, forced prostitution, trafficking, and other forms of abuse.**
- **Psychosocial Impact:** Children affected by armed conflict often experience severe psychological distress, including **post-traumatic stress disorder (PTSD),** anxiety, depression, and emotional trauma, due to exposure to violence, loss of loved ones, and the disruption of their lives.
- **Denial of Humanitarian Access:** In many conflict-affected areas, children face limited or no access to life-saving assistance, including food, clean water, healthcare, and shelter.
 - This denial of humanitarian access worsens their vulnerability. It also **hampers efforts to provide essential services and support for their well-being and development.**

Medicines Patent Pool Agreement for Leukaemia

Why in News?

Recently, the **Medicines Patent Pool (MPP)**, a **United Nations**-backed group signed sub-licence agreements with three India-based companies to make certain **Cancer Drugs** more accessible and cheaper for patients.

- These agreements **allow the production of generic versions of Novartis' cancer treatment drug Nilotinib,** primarily used for **Chronic Myeloid Leukaemia (CML),** in several countries.
- The licence covers **India, seven middle-income countries,** and 44 territories, allowing the generic versions of Nilotinib to be supplied, subject to local regulatory authorization.

What is the Medicines Patent Pool?

- MPP is a **United Nations**-backed **public health organisation** working to increase access to, and facilitate the **development of, life-saving medicines** for Low- and Middle-Income Countries (LMIC).
- It was founded in July 2010, based in Geneva, Switzerland.
- MPP partners with civil society, governments, international organisations, industry, patient groups, and other stakeholders, to **prioritise and license needed medicines and pool Intellectual Property** to encourage generic manufacture and the development of new formulations.
- As of now, MPP has signed agreements with **twelve patent holders for thirteen Human Immunodeficiency Virus (HIV) antiretrovirals,** one HIV technology platform, three **hepatitis C** direct-acting antivirals, a **tuberculosis** treatment, a long-acting technology, two experimental oral antiviral treatments for **Covid-19** and a Covid-19 serological antibody technology.

What is Chronic Myeloid Leukaemia (CML)?

- **About:**
 - It is one of the types of **Leukemia**, which is a **blood-cell cancer** that affects the **bone marrow and the blood.** Other types are,
 - Acute Lymphoblastic Leukemia (ALL)
 - Acute Myeloid Leukemia (AML)
 - Chronic Lymphocytic Leukemia (CLL).
 - It is characterized by the **uncontrolled growth of abnormal white blood cells** called myeloid cells.
 - CML typically progresses **slowly, and it is often diagnosed during** the chronic phase.
- **Diagnosis:**
 - CML is typically diagnosed through a combination of blood tests and bone **marrow examination.**

UNDP and DAY-NULM for Women Entrepreneurs

Why in News?

Recently, the **United Nations Development Programme (UNDP)** and the **Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM)** have joined hands to empower **women entrepreneurs** in India.

Note:



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What are the Key Highlights of the Partnership?

➤ Aim:

- The partnership aims to provide support for women looking to start or expand their **own enterprises in various sectors**, such as care economy, **digital economy, electric mobility, waste management**, food packaging and more.
- To enhance the implementation of national-level schemes for **urban poverty alleviation** and **livelihood promotion** by providing capacity building support to **DAY-NULM**.
- To pilot innovative solutions, particularly in the care economy domain, to address the **challenges and opportunities faced by women entrepreneurs**.

➤ Coverage and Time Span:

- The project will cover **eight cities in the initial phase** and will span over three years, with the possibility of extension beyond 2025.

➤ Role of UNDP:

- UNDP will **offer national-level capacity building support** to DAY-NULM, focusing on knowledge generation and management, such as compiling compendiums of best practices related to urban poverty.
- UNDP and DAY-NULM will jointly engage in on-ground mobilization activities that involve **identifying pockets of urban poverty** and **potential entrepreneurs**, as well as facilitating access to business development services.
- UNDP will also contribute to the initiative by developing community business mentors called **Biz-Sakhis** in selected project locations.
 - These mentors can support new and existing enterprises and serve as a resource for DAY-NULM at a later stage.

➤ Importance:

- Women entrepreneurship is a proven strategy for **poverty alleviation**, financial independence, and reshaping gender norms.
 - Today, women account for **only 15% of the total entrepreneurs in India**. By increasing this number, the partnership **not only empowers women**, but also **accelerates economic growth** and ensures a happy and healthy society.

- The partnership leverages UNDP's experience in linking over 200,000 women with better employment opportunities, and DAY-NULM's mandate of uplifting urban communities through sustainable livelihood opportunities.

What is Deendayal Antyodaya Yojana-National Urban Livelihoods Mission?

- The mission was **launched in 2014** and is being implemented by the **Urban Ministry of Housing & Poverty Alleviation**.
- It aims to uplift urban poor by enhancing sustainable livelihood opportunities through skill development.
- It is **Centrally Sponsored Scheme**. Funding will be shared between the **Centre and the States in the ratio of 75:25**. For **North eastern and Special Category** – the **ratio will be 90:10**.
- DAY-NULM has mobilized more than 8.4 million urban poor women across India, forming over 8,31,000 Self-Help Groups (SHGs) in over 4,000 towns till 2023.

What Challenges

Do Women Entrepreneurs Face?

- Lack of female **mentors** and role models.
- Difficulty in **maximizing the value of business networks** traditionally dominated by men.
- **Gender stereotypes** and biases regarding logical and empathetic capabilities.
- Societal barriers imposed by **patriarchal constructs and familial constraints**.
- Challenges in raising **finance and lack of creditworthiness**.
- Limited avenues for financial management and reliance on others.

What are the Initiatives Related to Women Entrepreneurship in India?

- The Government of India and many state governments are running schemes to improve financial inclusivity for women. **Pradhan Mantri Mudra Yojana** is one such high-potential scheme for women because it **offers collateral free loans**.
- The **Dena Shakti Scheme** provides loans up to ₹20 lakh for women entrepreneurs in **agriculture, manufacturing, micro-credit, retail stores, or small enterprises**.

Note:

- The scheme also provides a **concession of 0.25%** on the rate of interest.
- The Government of India also launched the **Stand Up India Scheme** to leverage the institutional credit structure to reach out to the underserved sector of people such as SCs, STs and **Women Entrepreneurs**.
- **Stree Shakti Yojana** and **Orient Mahila Vikas Yojana** support women who have majority of ownership in the business.
- Women who want to enroll themselves in **catering business** can attain loan via the **Annapurna Yojana**.

Adoption in India

Why in News?

- The **Ministry of Women and Child Development** has recently highlighted the significant **backlog of adoption cases in Maharashtra**, with the highest number of pending adoption cases in India (329 awaiting resolutions).
- In January 2023, the **Bombay HC directed the state government not to transfer pending adoption proceedings to District Magistrates**, (as mandated under the Juvenile Justice (Care and Protection of Children) Amendment Act, 2021), leading to confusion and hindering progress.

What is the Status of Child Adoption in India?

- **About:**
 - It is a **legal and emotional process** that involves **accepting the responsibility of caring for a child** who is not biologically related to the adoptive parents.
 - The process of adoption in India is monitored and regulated by the **Central Adoption Resource Authority (CARA)**, which is part of the Ministry of Women and Child Care.
 - **CARA is the nodal body for adoption of Indian children and is mandated to monitor and regulate in-country adoptions.**
 - CARA is also designated as the **Central Authority to deal with inter-country adoptions** in accordance with the provisions of the **Hague Convention on Intercountry Adoption, 1993**, ratified by Government of India in 2003.
- **Laws Related to Adoption in India:**

- Adoptions in India are governed by two laws: the **Hindu Adoption and Maintenance Act, 1956 (HAMA)** and the **Juvenile Justice Act, 2015**.
 - Both laws have their separate eligibility criteria for adoptive parents.
- Those applying under the **JJ Act have to register on CARA's portal after which a specialised adoption agency carries out a home study report**.
 - After it finds the candidate eligible for adoption, a child declared legally free for adoption is referred to the applicant.
- Under HAMA, a **"dattaka hom"** ceremony or an adoption deed or a court order is sufficient to obtain irrevocable adoption rights.
 - **Hindus, Buddhists, Jains, and Sikhs are legalized to adopt kids under this Act.**

Recent Development:

- The Parliament passed the **Juvenile Justice (Care and Protection of Children) Amendment Act, 2021** in order to amend the Juvenile Justice Act (JJ Act), 2015.
 - The key changes include authorising **District Magistrates and Additional District Magistrates to issue adoption orders under Section 61 of the JJ Act**.
 - Earlier in JJ Act 2015, adoption of a child is final on the issuance of an adoption order by the civil court.
- The Ministry of Women and Child Development has introduced the **Adoption Regulations-2022**, which has streamlined the adoption process.
 - **District Magistrates (DMs) and Child Welfare Committees** have been directed to upload adoption orders and case status in real time.
 - Since the implementation of the **Adoption Regulations-2022**, 2,297 adoption orders have been issued by DMs nationwide, resolving a significant portion of pending cases.

What are the Major

Challenges Related to Adoption in India?

- **Lengthy and Complex Adoption Process:** The adoption process in India can be lengthy, bureaucratic, and complex, leading to delays in the placement of children with suitable families.

Note:



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- India's tedious and interminable adoption process can clearly be seen in the statistics with the CARA which states that **while more than 30,000 prospective parents are currently waiting to adopt, less than 7% the number of children — 2131— are legally free for adoption.**
- Around two-third of them are children with special needs, and **it takes three years for an adoption process to complete.**
- **Illegal and Unregulated Practices:** Unfortunately, there are instances of illegal and unregulated adoption practices in India. This includes **baby trafficking, child-selling, and the existence of unregistered adoption agencies**, which exploit vulnerable children and biological parents.
 - In 2018, **Ranchi's Mother Teresa's Missionaries of Charity** came under fire for its **"baby-selling racket"** after a nun from the shelter confessed to selling four children.
- **Returning Children after Adoption:** India also faces **an unusual upsurge in adoptive parents** returning children after adopting.
 - In 2020, CARA stated that over 1,100 children adopted across the country have been **returned to child care institutions by their adoptive parents** in the last five years.

Global Gender Gap Report 2023: WEF

Why in News?

Recently, 17th edition of the **Global Gender Gap Report 2023** has been released by the **World Economic Forum (WEF)**, evaluating the **status of Gender Parity** across 146 countries.

What is the Global Gender Gap Index?

➤ About:

- It benchmarks countries on their progress towards **gender parity in four Key dimensions** with Submatrices.
 - Economic Participation and Opportunity
 - Educational Attainment
 - Health and Survival
 - Political Empowerment

- On each of the four sub-indices as well as on the overall index the **GGG index provides scores between 0 and 1**, where 1 shows full gender parity and 0 is complete imparity.
- It is the longest-standing index, **which tracks progress towards closing these gaps over time since its inception in 2006.**
- **Objectives:**
 - To serve as a **compass to track progress on relative gaps** between women and men on health, education, economy and politics.
 - Through this annual yardstick, the **stakeholders within each country are able to set priorities** relevant in each specific economic, political and cultural context.

What are the Key Findings?

➤ Global Gender Gap Score:

- The global gender gap score in 2023 **stands at 68.4%**, indicating a modest improvement of 0.3% points compared to the previous year.
- At the current rate of progress, it would take **131 years to achieve full gender parity**, showing a significant slowdown in the overall rate of change.

➤ Top-Ranking Countries:

- Iceland has **maintained its position as the most gender-equal country** for the 14th consecutive year, with a **gender gap score of 91.2%**.
 - It is the only country to have closed over 90% of its gender gap.
- Three other Nordic countries—Norway (87.9%), Finland (86.3%), and Sweden (81.5%)—join **Iceland in the top five rankings**, highlighting their strong commitment to gender equality.

➤ Health and Survival:

- The gender gap in health and survival has closed by 96% globally.

➤ Political Empowerment:

- The political empowerment gender gap remains significant, with a closure rate of 22.1% globally and a projected timeline of 162 years to close the gap.

➤ Educational Attainment:

- The gender gap in educational attainment **has closed by 95.2%**, with significant progress **made over the 2006-2023 period.**

Note:



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- The gender gap in educational attainment is projected to close in 16 years.

➤ **Economic Participation and Opportunity:**

- The gender gap in economic participation and opportunity **stands at 60.1% globally**, highlighting the persistent challenges in achieving gender equality in the workforce.
- The gender gap in economic participation and opportunity is projected to close in 169 years.

How has India

Fared in the Gender Gap Report 2023?

➤ **India's Rank:**

- India has made significant progress, **rising from 135th (in 2022) to 127th** out of 146 countries in the report's 2023 edition, indicating an improvement in its ranking.
- **India's neighbours Pakistan ranked at 142**, Bangladesh at 59, China at 107, Nepal at 116, Sri Lanka at 115 and Bhutan at 103.
- The country has improved by **1.4 percentage points and eight positions** since the last edition, marking a partial **recovery towards its 2020 parity level**.
- India had closed 64.3% of the overall gender gap.

➤ **Gender Parity in Education:**

- India has achieved **parity in enrolment across all levels** of education, reflecting a positive development in the country's education system.

➤ **Economic Participation and Opportunity:**

- India's progress in economic participation and opportunity remains a challenge, with **only 36.7% gender parity achieved** in this domain.
- While there has been an uptick in parity in wages and income, there is a **slight drop in the representation of women** in senior positions and technical roles.

➤ **Political Empowerment:**

- India has made strides in political empowerment, **achieving 25.3% parity** in this domain. Women represent **15.1% of parliamentarians**, which is the highest representation **since the inaugural report in 2006**.
- 18 countries — including Bolivia (50.4%), India (44.4%) and France (42.3%) — have achieved **women's representation of over 40% in Local Governance**.

➤ **Health and Survival:**

- There is a 1.9%-point improvement in India's sex ratio at birth, **after more than a decade of slow progress**.
- However, India, along with Vietnam, China, and Azerbaijan, still **has relatively low scores on the Health and Survival** sub-index due to **skewed sex ratios**.

What are the Indian

Initiatives to reduce Gender

Gap in Social, Economic and Political Life?

➤ **Economic Participation and Health and Survival:**

- **Beti Bachao Beti Padhao:** It ensures the protection, survival and education of the girl child.

- **Mahila Shakti Kendra:** Aims to empower rural women with opportunities for skill development and employment.

- **Mahila Police Volunteers:** It envisages engagement of Mahila Police Volunteers in States/UTs who act as a link between police and community and facilitates women in distress.

- **Rashtriya Mahila Kosh:** It is an apex micro-finance organization that provides micro-credit at concessional terms to poor women for various livelihood and income generating activities.

- **Sukanya Samriddhi Yojna:** Under this scheme girls have been economically empowered by opening their bank accounts.

- **Female Entrepreneurship:** To promote female entrepreneurship, the Government has initiated Programmes like Stand-Up India and Mahila e-Haat (online marketing platform to support women entrepreneurs/ SHGs/NGOs), Entrepreneurship and Skill Development Programme (ESSDP).

- **Kasturba Gandhi Balika Vidyalyaya:** They have been opened in Educationally Backward Blocks (EBBs).

- **Political Reservation:** Government has reserved **33% of the seats in Panchayati Raj Institutions for women**.

- **Capacity Building of Elected Women Representatives:** It is conducted with a view to empowering women to participate effectively in the governance processes.

Note:



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Anxiety Disorders

Why in News?

Recently, there has been a growing recognition of the **impact of anxiety disorders** on individuals' **daily lives and overall well-being**. These common mental health conditions affect a significant portion of the population and can lead to persistent distress and impairment.

- Anxiety is a normal emotion that **can become problematic** when it becomes **persistent and disruptive**. In such cases, it may **indicate an anxiety disorder** that requires attention and appropriate treatment.

What is Anxiety Disorder?

- **About:**
 - Anxiety disorders are a **group of mental health conditions** that involve **excessive and irrational fear and worry** about various aspects of life.
 - Anxiety disorders can affect anyone, regardless of age, gender, culture, or background.
- **Historical Context of Anxiety Disorders:**
 - Anxiety disorders were historically **classified within mood disorders** until the late 19th century. **Sigmund Freud** introduced the concept of "**anxiety neurosis**" to differentiate anxiety symptoms from depression.
 - Freud's original anxiety neurosis included people with phobias and panic attacks.
 - Anxiety neurosis is further categorized into **anxiety neurosis** (people with mainly psychological symptoms of anxiety) and **anxiety hysteria** (people with phobias and physical symptoms of anxiety).
- **Prevalence:**
 - According to India's **National Mental Health Survey**, neurosis and stress-related disorders have a **prevalence of 3.5% in India**.
 - These disorders are more commonly observed in women and are often overlooked or misdiagnosed in primary care settings. Childhood, adolescence, and early adulthood are considered high-risk periods for the onset of anxiety disorders.
- **Clinical Features of Common Anxiety Disorders:**
 - **Generalized Anxiety Disorder (GAD):**
 - **Excessive worrying** lasting over six months, not restricted to specific circumstances, and often accompanied by physical symptoms and distress.

- **Panic Disorder:**
 - Recurrent, unexpected panic attacks characterized by intense physical symptoms and fear of catastrophic outcomes.
- **Social Anxiety Disorder:**
 - Intense fear of **negative evaluation by others**, resulting in avoidance of social situations and significant distress.
- **Separation Anxiety Disorder:**
 - Fear and distress concerning **separation from attachment figures**, accompanied by excessive worry about potential harm.
- **Specific Phobias:**
 - Irrational fear of specific objects, animals, or situations.

Causes For Anxiety Disorders:

- **Genetics:**
 - An increased likelihood of anxiety disorders can be observed in individuals with a **family history of anxiety**, suggesting a genetic predisposition.
- **Brain Chemistry:**
 - **Imbalances in neurotransmitters**, which are responsible for regulating mood and emotions, may play a role in the development of anxiety disorders.
- **Personality Traits:**
 - Certain personality traits, such as being **shy, perfectionistic, or prone to stress**, can make individuals more susceptible to developing an anxiety disorder.
- **Life Events:**
 - **Traumatic or stressful experiences, such as abuse, violence, loss, or illness**, can trigger or exacerbate anxiety disorders. Conversely, even positive life events like marriage, having a baby, or starting a new job can induce anxiety in some individuals.
- **Medical Conditions:**
 - Underlying **physical health issues**, including diabetes, heart disease, thyroid problems, or hormonal imbalances, can contribute to the onset or manifestation of anxiety symptoms.
- **Treating Anxiety Disorders:**
 - Treatment decisions are based on the severity, persistence, and impact of symptoms, as well as patient preferences.

Note:

- Evidence-based interventions include selective serotonin reuptake inhibitors (SSRIs) and cognitive-behavioral therapy (CBT).
- Co-occurring depression requires separate consideration and specific treatment.
- Treatment is usually continued for 9-12 months after symptom remission, gradually phased out as recommended.

What Initiatives has the Government of India taken to Address Mental Health?

- **National Mental Health Program (NMHP):** The **National Mental Health Program (NMHP)** was adopted by the government in **1982** in response to the large number of mental disorders and shortage of mental health professionals.
 - **District Mental Health Programme (DMHP), 1996** was also launched to provide community mental health services at the primary health care level.
- **Mental Health Act:** As part of the **Mental Health Care Act 2017**, every affected person has **access to mental healthcare and treatment from government institutions**.
 - It has significantly reduced the significance of **Section 309 IPC** and **attempts to commit suicide are punishable only as exceptions**.
- **Kiran Helpline:**
 - In 2020, the Ministry of Social Justice and Empowerment launched a **24/7 toll-free helpline 'Kiran'** to provide mental health support.
- **Manodarpan Initiative:**
 - It aimed at providing **psychosocial support** to students, teachers, and family members during the **Covid-19 pandemic**.
- **MANAS Mobile App:**
 - To **promote mental well-being across age groups**, the Government of India launched **MANAS (Mental Health and Normalcy Augmentation System)** in 2021.

Global Trends: Forced Displacement in 2022

Why in News?

The year 2022 witnessed a staggering surge in the number of people uprooted from their homes due to

social and **climate crises**, as highlighted in a report by the **United Nations High Commissioner for Refugees (UNHCR)**.

- With an increase of 21% compared to 2021, a **total of 108.4 million individuals were forcibly displaced, including a significant number of children**.

What are the Major Highlights of the Report?

- **About:**
 - According to UNHCR's statistics on forced displacement, the number of people who were forced to flee their homes due to **persecution, conflict, violence, human rights violations and events seriously disturbing public order** reached a **record 108.4 million by the end of 2022**, and 30% of them were children.
 - This represents an increase of **19 million people compared to the end of 2021**.
 - Of the global total of 108.4 million forcibly displaced people, **35.3 million were refugees**, people who crossed an international border to find safety.
 - **Forced displacement** can be **internal or external**, depending on whether the displaced people remain within their country of origin or cross an international border.
- **Drivers of Displacement:**
 - The main driver of displacement in 2022 was the **full-scale war in Ukraine, which erupted in February 2022** and created the fastest and one of the largest displacement crises since **World War II**.
 - By the end of 2022, a **total of 11.6 million Ukrainians remained displaced, including 5.9 million within their country** and 5.7 million who fled to neighbouring countries and beyond.
 - Other ongoing and new conflicts also contributed to forced displacement across the globe, such as in the **Democratic Republic of the Congo (DRC)**, **Ethiopia** and **Myanmar**, where more than 1 million people were displaced within each country.
 - The total number of people displaced across the world increased to 110 million by May 2023, **driven by the fresh conflict in Sudan**
 - In addition to conflict and violence, **climate change and natural disasters also triggered displacement** and exacerbated the vulnerability of displaced populations.

Note:



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- **Climate disasters caused 32.6 million internal displacements** throughout 2022 and 8.7 million of the people did not manage to return home by the end of the year.
- **Disaster related internal displacement accounted for more than half (54%)** of all new displacements in 2022.

➤ **Displacement Burden on Poorer Countries:**

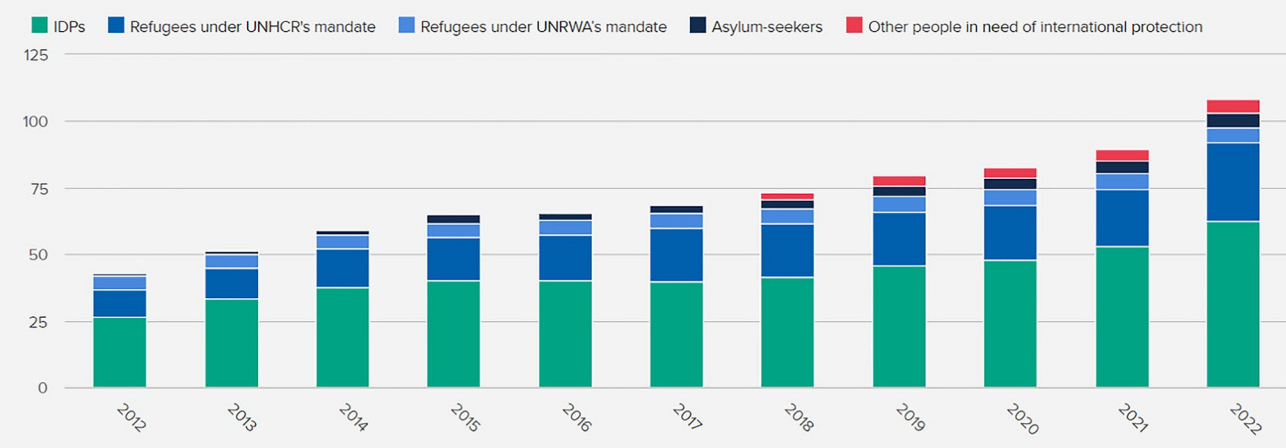
- **Low- and middle-income countries** bore the greatest burden, with **90% of the displaced population originating from these nations.**
- **These countries also hosted 76% of the world's refugees in 2022**, highlighting their disproportionate responsibility.

- **Least Developed Countries (LDCs) hosted 20% of the global refugee population**, with nations such as **Bangladesh, Chad, the DRC, Ethiopia, Rwanda, South Sudan, Sudan, Uganda, Tanzania, and Yemen** facing significant challenges.

➤ **Statelessness:**

- Statelessness exacerbates the difficulties faced by **refugees**, denying them access to basic necessities like healthcare, education, and employment.
- An **estimated 4.4 million people worldwide were stateless or of undetermined nationality by the end of 2022**, a 2% increase from the year 2021.

People forced to flee worldwide (2012 - 2022)



What are the Impacts of Forced Displacement?

➤ **Impacts on Refugees:**

- **Economic Hardships:** Many refugees lose their livelihoods and economic stability upon displacement. They often face barriers in accessing employment opportunities, education, and financial resources in host countries.
 - Economic hardships can result in **poverty, limited access to essential goods and services, and increased vulnerability.**
- **Education Disruption:** For refugee children and youth, access to education is often disrupted or entirely denied.
 - **Limited educational opportunities can hinder their long-term development** and prospects for

a better future, perpetuating a cycle of poverty and dependency.

- **Trauma and Emotional Distress:** Refugees often experience traumatic events during their displacement, including **violence, loss of loved ones, and the destruction of their homes and communities.**
 - This can lead to **severe emotional distress, including post-traumatic stress disorder (PTSD), anxiety, and depression.**
- **Physical Health Challenges:** Displaced refugees may face numerous health challenges, including inadequate access to healthcare, malnutrition, and exposure to unsanitary conditions.
 - **Lack of proper sanitation and healthcare facilities** can lead to the spread of diseases, further compromising their well-being.

Note:

- **Social and Cultural Challenges:** Refugees often face challenges in integrating into the host society due to **language barriers, cultural differences, and discrimination**.
 - Social exclusion and marginalization can exacerbate their feelings of isolation and hinder their ability to rebuild their lives.
- **Impacts on Host Communities:**
 - **Strain on Resources and Services:** The sudden influx of refugees can place significant pressure on host communities' resources, **including housing, healthcare facilities, schools, and public services**.
 - The **increased demand can overburden existing infrastructure**, leading to shortages and reduced access for both refugees and host community members.
 - **Social Cohesion and Cultural Dynamics:** The arrival of refugees may create **social tensions and cultural dynamics within host communities**.
 - Differences in language, religion, and customs can generate misunderstandings and conflicts.
 - **Increased Competition for Jobs:** The presence of refugees can lead to competition for employment opportunities in host communities.
 - Some host community members may **perceive refugees as taking away jobs or driving down wages**, leading to tension and resentment.

What can be the Possible Solutions to Address Forced Displacement?

- **Humanitarian Assistance:** Providing immediate humanitarian aid such as food, shelter, healthcare, and clean water to displaced populations is crucial.
 - International organisations, governments, and NGOs should work together to ensure the **basic needs of displaced people are met**.
- **Conflict Resolution and Peacebuilding:** Addressing the root causes of forced displacement requires **efforts to resolve conflicts and promote peace**.
 - **Diplomatic negotiations, mediation, and peacebuilding initiatives** can help prevent further displacement by resolving the underlying issues.
- **Protection of Human Rights:** Upholding and protecting the human rights of displaced individuals is essential.
 - Governments should enact and enforce laws that protect the **rights of displaced people, including**

their right to safety, dignity, and access to basic services.

- **Empowering Local Communities:** Strengthening the capacity of host communities to accommodate and support displaced populations can help mitigate tensions and promote social cohesion.
 - This can be done through **investments in infrastructure, education, healthcare, and livelihood opportunities**.
- **Regional and International Cooperation:** Forced displacement often requires a coordinated response from multiple countries and international organisations.
 - Collaboration between governments, regional bodies, and humanitarian agencies is crucial to **share responsibilities, resources, and expertise in addressing displacement challenges**.
 - This includes framing a legislation that **recognizes the rights of displaced people, establishes procedures for their protection**, and provides avenues for durable solutions such as **voluntary return, resettlement, and local integration**.

What is the United Nations High Commissioner for Refugees?

- UNHCR, the **UN Refugee Agency**, is a global organisation dedicated to **saving lives, protecting rights and building a better future for people forced to flee their homes because of conflict and persecution**.
- It was established by the **General Assembly of the United Nations in 1950** in the **aftermath of the Second World War** to help the millions of people who had lost their homes.
 - Currently, UNHCR is governed by the **UNGA and the UN Economic and Social Council (ECOSOC)**.
- It is guided by and acts as the guardian of the **1951 Refugee Convention and its 1967 Protocol**.
 - **India is not a party** to the 1951 Refugee Convention and its 1967 Protocol.

Rape Crimes

Why in News?

Recently, Japan has passed a bill that introduces crucial measures to enhance Legal Protections for minors, regarding **Rape and Sexual Crimes**.

Note:

What are the Key Points of the New Measures?

➤ New Definition of Rape:

- Japan has expanded the definition of rape from “forced sexual intercourse” to “non-consensual sexual intercourse”, aiming to encompass a wider range of scenarios where victims may be unable to refuse or express their lack of consent to engage in sexual intercourse.

➤ Age of Consent:

- Age of consent has been increased to 16 from 13 (the lowest among G7 countries), which is on par with many US states and European nations including the UK, Finland and Norway.
 - The age of consent refers to the minimum age at which sexual activity is legally allowed, with any activity below that age considered statutory rape.

➤ Visitation Request Offense:

- The law introduces a new offense called “visitation request offense”, targeting individuals who use intimidation, seduction, or money to coerce children under the age of 16 into meeting for sexual purposes.
 - Violators of this offense may face imprisonment of up to one year or a fine of 500,000 yen (USD 3,500).
- The law revision also criminalizes “photo voyeurism” — secretly taking sexual pictures of people — and the online grooming of children.

What are the Provisions Against Rape in Indian Context?

➤ About:

- Rape is forced sexual intercourse, including vaginal, anal, or oral penetration, penetration may be by a body part or an object.
- As per Section 375 of the Indian Penal Code (IPC), rape is committed by a man when he has sexual intercourse with a woman under any of the following circumstances:
 - Against her will.
 - Without her consent.
 - With her consent obtained by using fear of death or hurt against her or someone she cares about.
 - With her consent, knowing that he is not her husband, she believes he is another man to

whom she is married or believes herself to be lawfully married.

- With her consent, when she is unable to understand the nature and consequences of giving consent due to unsoundness of mind, intoxication, or the administration of stupefying or unwholesome substances.
- With or without her consent, when she is under 18 years of age.
- When she is unable to communicate consent.

➤ Crime of Rape and Punishment:

- During a rape, if the accused injured the women so badly that she dies, or goes into a vegetative state, he can be given the Death Sentence or lifetime imprisonment.
- If a woman is raped at the same time by a group of people, each of them will be Punished for committing the crime (section 376D IPC).
- Section 376E of IPC allows the death sentence to be imposed where a person is convicted for second time for rape.

Why is Rape Pervasive in India?

- **Gender Inequality:** Deep-rooted gender inequality and patriarchal attitudes contribute to the objectification and subjugation of women, creating an environment where sexual violence can occur.
- **Societal Norms and Attitudes:** Regressive societal norms and attitudes towards women, such as victim-blaming and the notion of “women’s honor,” perpetuate a culture of silence and stigmatization around sexual assault.
 - This can discourage victims from reporting incidents and seeking justice.
- **Lack of Awareness:** Insufficient awareness about gender equality, consent, and sexual rights, particularly in rural areas, hampers efforts to prevent and address sexual violence.
 - Comprehensive sex education and awareness campaigns are crucial to challenge misconceptions and promote respectful attitudes.
- **Inadequate Law Enforcement:** Instances of corruption, negligence, and insensitivity within the law enforcement and criminal justice systems hinder the effective investigation, prosecution, and conviction of rape cases.

Note:

- This **lack of accountability** can embolden perpetrators and deter survivors from seeking legal recourse.
- **Slow Judicial Processes:** Lengthy and complex legal procedures, coupled with a significant backlog of cases, often lead to delayed justice and can discourage victims from pursuing legal action.
- Establishing **Fast-Track Courts** and streamlining the judicial process can help expedite rape trials.
- **Social Stigma and Victim Blaming:** Survivors of rape often face societal stigma, blame, and discrimination, which can further traumatize them and discourage reporting.
- **Addressing victim-blaming attitudes** and providing support services for survivors are essential to break this cycle.

What are the Laws Related to Rape in India?

- **Criminal Law (Amendment) Act 2013:**
 - Under the Act, the minimum sentence of rape was **altered from seven years to ten years**. Furthermore, in cases which resulted in the death of the victim being left in a vegetative state, the **minimum sentence has been duly increased to twenty years**,
- **Protection of Children from Sexual Offences Act, 2012 (POCSO):**
 - The Act was enacted to protect the **children from sexual assault, sexual harassment**, and pornography.
 - The POCSO Act raised the **age of consent to 18 years (which was 16 till 2012)** and criminalizes all sexual activities for those **under 18 even if consent was factually present** between two minors.
 - This Act was also amended in 2019 to make provisions for enhancement of punishment for various offences to ensure safety, security & dignity of a child.
- **Rights of a Rape Victim:**
 - **Right to zero FIR:** The term **zero FIR** means that the person can file an FIR in any police station, irrespective of the place of incident of the jurisdiction.
 - **Free Medical Treatment:** According to **section 357C** of code of criminal procedure (CrPC), **no private or government hospitals can charge fees** for the treatment of rape victims.

- **No two-Finger Test:** No doctor shall possess the right to do **Two Finger Tests** while doing the medical examination.
- **Right to Compensation:** A new provision has been introduced as **section 357A of the CrPC**, which states the victim compensation scheme.

What are the Important Judgements Related to Rape in India?

- **Tukaram and Ganpat vs. State of Maharashtra 1972 (Mathura Rape Case):**
 - The judgment of the trial court favored the accused, **stating that Mathura's consent was voluntary** since she was accustomed to sexual intercourse. However, the Bombay High Court set aside the judgment and sentenced the accused to imprisonment.
 - The **Supreme Court (SC)** later acquitted the accused, sparking public outrage. This case highlighted the need for reforms in rape laws.
- **State of Punjab vs. Gurmit Singh 1984:**
 - The Supreme Court advised the **lower judiciary not to describe a victim as having a loose character** even if she is shown to be habituated to sex. The judgment emphasized the need to focus on the act of rape and not on the victim's character.
- **Delhi Domestic Working Women v. Union of India 1995:**
 - The SC laid down important guidelines in this case:
 - Providing legal representation to complainants of sexual assault cases.
 - Ensuring legal assistance and guidance of a lawyer at the police station.
 - Maintaining the anonymity of the victim in rape trials.
 - Establishing a Criminal Injuries Compensation Board.
 - Providing interim compensation to rape victims.
 - Providing medical help and allowing abortion if the victim becomes pregnant due to the rape.
- **B. Gautam v. Shubra Chakraborty 1996:**
 - The SC held that an interim compensation of Rs. 1000 per month should be given to rape victims.
- **Chairman, Railway Board vs. Chandrima Das 2000:**
 - The SC held that **compensation can be granted to rape victims** on the grounds of domestic

Note:



jurisprudence based on constitutional provisions and human rights jurisprudence based on international recognition.

One Nation One Anganwadi Program

Why in News?

More than 57,000 migrant workers have registered for the special **one nation one Anganwadi program on Poshan Tracker App**.

- Poshan app will allow migrant workers to access nurseries at their respective locations by using the Poshan Tracker App on mobile phones.

What is Poshan Tracker App?

- The **Ministry of Women and Child Development (MoWCD)** has launched an application called **Poshan Tracker**.
 - The **Poshan Tracker** management application provides a **360-degree view of the activities of the Anganwadi Centre**.
- The app facilitates efficient service delivery by digitizing and automating the tasks performed by Anganwadi Workers.
- To support their work, smartphones procured through **Government e-Market (GeM)** have been provided to the workers.
 - Additionally, a **designated individual has been appointed in each state** to offer technical support and resolve any issues related to downloading and using the new Poshan Tracker application.
 - **Migrant workers** who have registered in their original state **can visit the nearest Anganwadi in their current place of residence to access the schemes** and services provided through the app.

What is Poshan Abhiyan?

- **About:**
 - **POSHAN Abhiyaan (Prime Minister's Overarching Scheme for Holistic Nutrition)** was launched the Prime Minister on **8th March 2018 in Jhunjhunu district of Rajasthan**.
- **Objectives:**

- Prevent and reduce Stunting in children (0-6 years)
- Prevent and reduce under-nutrition (underweight prevalence) in children (0-6 years)
- Reduce the prevalence of anemia among young Children (6-59 months)
- Reduce the prevalence of anemia among Women and Adolescent Girls in the age group of 15-49 years
- Reduce Low Birth Weight (LBW).

What is Anganwadi?

- **Anganwadi Services** (Now renamed as **Saksham Anganwadi and Poshan 2.0**) is a Centrally Sponsored Scheme implemented by States/UTs.
- It provides a **package of six services**, namely, (i) Supplementary Nutrition; (ii) Pre-school Non-formal Education; (iii) Nutrition & Health Education; (iv) Immunization; (v) Health Check-up; and (vi) Referral Services.
- It provides services to all eligible beneficiaries, namely, children in the age group of 0-6 years, pregnant women and lactating mothers through the platform of Anganwadi Centres across the country.
 - Three of the services viz. Immunization, Health Check-up and Referral Services are related to health and are provided through **NRHM** & Public Health Infrastructure.

What are the other related Initiatives?

- **Anemia Mukh Bharat Abhiyan**
- **The National Food Security Act (NFSA), 2013**
- **Pradhan Mantri Matru Vandana Yojana (PMMVY)**
- **PM POSHAN SHAKTI Nirman (PM-POSHAN)**.

Lingering Health Effects of Bhopal Gas Tragedy

Why in News?

The **1984 Bhopal Gas Tragedy**, one of the world's worst industrial disasters, continues to cast a long shadow on the health of future generations, **even those who were not directly exposed to the toxic gas**.

- A recent study has shed light on the persistent health issues faced by **individuals, including disabilities and cancer, decades after the tragic event**.

Note:



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What are the Major Findings of the Research?

- **About:** The study reveals that the repercussions of the Bhopal Gas Tragedy extend beyond immediate mortality and morbidity. It has been observed that the **impacts of the disaster are visible in a 100 km radius around Bhopal**, affecting a wider area than previously reported.
 - The findings highlight the social costs associated with the tragedy, which continue to afflict subsequent generations.
- **Health Issues Faced by Survivors:** The survivors of the Bhopal Gas Tragedy have experienced a range of health problems over the years. These include **respiratory, neurological, musculoskeletal, ophthalmic** (related to eyes), and **endocrine issues**.
 - Additionally, there has been a significant increase in **miscarriages, stillbirths, neonatal mortality, menstrual abnormalities**, and premature menopause among women exposed to the toxic gas.
- **Investigating Long-Term Health Effects:** Researchers from the **University of California (UC)** conducted a comprehensive analysis to assess the long-term health consequences and potential intergenerational effects of the Bhopal Gas Tragedy.
 - They gathered data from the **National Family Health Survey (NFHS-4) conducted between 2015 and 2016 and the Integrated Public Use Microdata Series from India for the year 1999**, including individuals ranging from ages six to 64 years and those in utero at the time of the disaster.
- **Disability among Women:** Women who were pregnant with male fetuses and resided within 100 km of Bhopal had a **one percentage point higher disability rate that affected their employment 15 years later**.
- **Decline in Male Births:** There was a decline in the **proportion of male births from 64% (1981-1984) to 60% (1985)** among mothers living within 100 km of Bhopal suggesting a higher vulnerability of male fetuses to external stress.
 - No significant change was observed beyond the 100 km radius.
- **Increased Cancer Risk:** Men born in 1985 within 100 km of Bhopal had an **eightfold higher risk of cancer compared to those born in the periods 1976-1984 and 1986-1990**.
 - Furthermore, men born in 1985 who continued to reside within 100 km of Bhopal experienced a

27-fold higher risk of cancer in 2015 compared to their counterparts born in the reference periods and individuals living more than 100 km away.

- **Employment Disabilities:** Those who were in utero during the tragedy and lived within 100 km of Bhopal were **one percentage point more likely to report employment disability** compared to older individuals and those residing further from Bhopal.
 - The likelihood increased to two percentage points among those living within 50 km of the city.

What was the Bhopal Gas Tragedy?

- **About:**
 - It was one of the **worst industrial accidents in history that occurred on the night of 2-3 December 1984** at the **Union Carbide India Limited (UCIL) pesticide plant in Bhopal, MP**.
 - It exposed people and animals to the highly toxic gas **methyl isocyanate (MIC)**, causing immediate and long-term health effects and deaths.
- **Causes of Gas Leak:**
 - The exact cause of the gas leak is still disputed between corporate negligence or employee sabotage. However, some of the factors that contributed to the disaster are:
 - The **UCIL plant was storing large quantities of MIC, a highly reactive and volatile chemical**, in poorly maintained tanks.
 - The plant was operating with **reduced staff and safety standards** due to financial losses and market competition.
 - The **plant was located in a densely populated area with no proper emergency plans** or warning systems for the nearby residents.
 - On the night of the disaster, **a large amount of water entered one of the MIC storage tanks (E610)**, either due to a faulty valve or a deliberate act of sabotage by a disgruntled worker.
 - This triggered an **exothermic reaction that increased the temperature and pressure inside the tank**, causing it to rupture and release a large cloud of MIC gas into the atmosphere.
- **Reactions:**
 - A 2019 report by the **UN's International Labour Organization (ILO)** said at least 30 tonnes of the

Note:



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poisonous gas affected more than 600,000 workers and nearby inhabitants.

- It added the disaster was among the world's "major industrial accidents after 1919".

○ **Laws Passed:**

- **Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985** - Gave the Central Govt the "exclusive right" to represent, and act in place of every person connected with the claims.
- **Environment (Protection) Act, 1986**, - Authorised the central govt to take relevant measures and regulate industrial activity for environmental and public safety.
- **Public Liability Insurance Act of 1991** - Provides public liability insurance for providing immediate relief to the persons affected by an accident occurring while handling any hazardous substance.
- **Civil Liability for Nuclear Damage Act 2010**- India enacted the CLNDA in 2010 to put in place a speedy compensation mechanism for victims of a nuclear accident. It provides for strict and no-fault liability on the operator of the nuclear plant, where it will be held liable for damage regardless of any fault on its part.

How can Future

Industrial Disasters be Prevented?

- **Risk Assessment Technologies:** There is a need to utilize advanced technologies such as **artificial intelligence, machine learning, and predictive analytics** to identify and assess potential risks in industrial processes.
 - These technologies can analyse vast amounts of data and provide early warnings for potential hazards, enabling proactive safety measures.
- **Social and Environmental Impact Assessments:** There is a need to prioritise **social and environmental impact assessments for industries**, especially those dealing with hazardous materials.
 - Such assessments should **consider the potential risks to nearby communities**, ecosystems, and natural resources, and incorporate preventive measures into the planning and design of industrial processes.
- **Strict Enforcement:** It is crucial to ensure strict enforcement of safety regulations by government authorities.
 - **Regular inspections should be conducted to monitor compliance** with safety standards, and severe penalties should be imposed for violations.



Note:

Science & Technology

Highlights

- Titan Tragedy Lessons for Proposed Indian Submersible Dive
- Influence of Y Chromosome on Cancer Outcomes
- Lab-Grown Meat
- Radio Telescope
- Evolution of Eukaryotes from Prokaryotes
- Paper-based Supercapacitor for Rapid Device Charging
- Manipulating Phonons for Quantum Computing
- Leptospirosis and Dengue Outbreaks
- Red Supergiant Star Betelgeuse
- Miyawaki Plantation Method
- Solar Ultraviolet Imaging Telescope
- Impact of Spaceflight on Brain Fluid Dynamics
- Transgenic Crops

Titan Tragedy Lessons for Proposed Indian Submersible Dive

Why in News?

Scientists are preparing for a Deep See Dive with the Vehicle **Matsya-6000** in late 2024 similar to the Titan submersible, which recently went missing.

- The Matsya-6000 project under **India's Deep Ocean Mission**, scheduled for late 2024, aims to explore the Indian Ocean at a depth of about 6,000 meters.
- In light of the recent incident of **Titan Submersible**, the safety systems employed for the crew will undergo reviews to ensure their effectiveness.

What Happened to the Titan?

- The submersible "Titan" experienced a **"catastrophic implosion,"** according to the U.S. Coast Guard. The five occupants on board are presumed to have died during the implosion.
- An implosion is the **opposite of an explosion**. In an explosion, the force acts outwards, but in an **implosion the force acts inwards**. When a submersible is deep in the ocean it experiences **the force on its surface due to water pressure**.
- When this force becomes larger than the force hull can withstand, the **vessel implodes violently**.
 - With every **descent of 10 meters into the water**, the pressure increases by approximately one atmosphere.

OceanGate's Titan Submersible

OceanGate Expeditions charges guests \$250,000 for eight-day trip from St. John's with 6-8 hour dive

TITAN: World's only crewed submersible able to take five people as deep as 4,000m

Length: 6.7m

Height: 2.8m

Propulsion: 4 x electric thrusters. 2 vertical, 2 horizontal

View port: 53cm wide

Speed: 3 knots

Weight: 10.4 tonnes

Hull: 12.7cm thick carbon-fibre

Capacity: 5 – 1 pilot, 1 crew, 3 guests
Limited space to stand or sit

Private toilet

Caps: Titanium

Source: Graphic News



- One atmosphere is equivalent to the average atmospheric pressure at sea level, which is approximately **101.325 kilopascals (kPa)** or **14.7 pounds per square inch (psi)**.

Note:

What are Carbon Fibres and Titanium?

- **Carbon Fibre:** Carbon fibre is a polymer that is **known to be quite strong despite being lightweight**. It can be as much as **five times stronger than steel** and twice as stiff.
 - A carbon-fibre composite, compared to titanium, is much stiffer and does not have the same kind of elasticity.
- **Titanium:** Titanium is as **strong as steel but around 45% lighter**. It is twice as **strong as aluminum** but only 60% heavier, according to the United States Geological Survey.
 - A titanium or thick steel pressure vessel is usually a spherical shape that can withstand the crushing pressures at 3,800m – the depth at which the Titanic wreck lies.
 - Titanium is elastic and **can adapt to an extended range of stresses without** any measurable permanent strain remaining after the return to atmospheric pressure. It shrinks to adjust to pressure forces and re-expands as these forces are alleviated.

Submarine Vs Submersible

- While the two categories can overlap, a **submarine refers to an underwater vehicle** that is largely independent and has power reserves to **help it depart from a port or come back** to the port after an expedition.
- Meanwhile, a submersible is **generally smaller in size** and has less power, so it needs to **work with a ship in order to be launched** and recovered.
- The missing submersible Titan was working with a vessel named Polar Prince.

What are the Key Points Related to Matsya-6000?

- **About:**
 - Matsya-6000 is an indigenous deep-sea dive submersible being developed by the **National Institute of Ocean Technology (NIOT)** in India. It is designed to explore the depths of the Indian Ocean at a **depth of about 6,000 meters**.
 - The mission aims to send three Indian navigators to a point approximately 1,500 km away from Kanyakumari, India.

Objective:

- The mission's primary objective is to support India's energy requirements and explore ocean resources.
- India aims to conduct exploratory mining for **Polymetallic Nodules** containing valuable resources such as copper, nickel, cobalt, and manganese.
- This endeavor aligns with the Indian government's Deep Ocean Mission, which aims to develop vehicles and technology for ocean scanning and mining.

Features of Submersible:

- The submersible features a **spherical titanium hull**, which is crucial for withstanding the immense pressure at great depths.
 - The titanium hull is manufactured by the **Indian Space Research Organisation (ISRO)**, as no commercial fabricators in India were capable of producing such a hull.
- Two hemispheres of titanium alloy are **fused to create a single hull**, which serves as the primary barrier between the crew and the surrounding water columns.

Learning from Titan Incident:

- The recent incident has highlighted the **need for thorough safety evaluations** and repeated testing.
- The inability to locate the submersible despite multiple communication systems **onboard raises questions**. Future submersibles may incorporate **"black box" equivalents**, similar to those found in aircraft, to aid in investigating the cause of such incidents.
- The choice of titanium for the submersible's enclosure, the utilization of syntactic foam, and the implementation of **acoustic communication and tracking systems should be thoroughly evaluated**.

Influence of Y Chromosome on Cancer Outcomes

Why in News?

Recent studies have provided insights into the **influence of the Y chromosome on cancer outcomes**, highlighting the **greater vulnerability of males to certain types of cancer**.

- These studies shed light on the role of the **Y chromosome in colorectal and bladder cancer**,

Note:

revealing key genetic mechanisms that contribute to tumour progression, **immune response**, and clinical prognosis.

What is

Colorectal and Bladder Cancer?

➤ About Cancer:

- Cancer is a complex and broad term used to **describe a group of diseases characterised by the uncontrolled growth and spread of abnormal cells in the body.**
 - These abnormal cells, **known as cancer cells**, have the ability to invade and destroy healthy tissues and organs.
- In a healthy body, **cells grow, divide, and die in a regulated manner**, allowing for the normal functioning of tissues and organs.
 - However, in the case of cancer, certain genetic mutations or **abnormalities disrupt this normal cell cycle**, causing cells to divide and grow uncontrollably.
 - These cells can form a mass of tissue called a **tumor**.

➤ Colorectal Cancer:

- **Colorectal Cancer, also known as colon cancer or rectal cancer**, refers to cancer that **develops in the colon or rectum**, which are parts of the large intestine.
 - It is **one of the most common types of cancer worldwide**.
- It typically **begins as small, noncancerous growths called polyps on the inner lining of the colon or rectum**. Over time, some of these polyps can develop into cancer.

➤ Bladder Cancer:

- Bladder cancer refers to the **development of cancerous cells** in the tissues of the urinary bladder, the **organ responsible for storing urine**.

What are the Major Findings of the Study?

➤ Role of the Y Chromosome in Colorectal Cancer in Males:

- Studies investigated the sex differences in colorectal cancer using a **mouse model driven by a known oncogene called KRAS**.

- They found that male mice had a higher frequency of metastasis (spread of cancer cells from the original site of a tumor to other parts of the body) and worse survival than female mice, **mirroring the outcomes seen in humans**.

- They also identified an **upregulated gene on the Y chromosome that contributes to colorectal cancer in males** by driving tumour invasion and aiding immune escape.

- It leads to the **activation of genes that promote cell migration, invasion, and angiogenesis** (the formation of new blood vessels), as well as the suppression of genes that stimulate immune response.

Note: KRAS is a gene that encodes a protein called **Kirsten Rat Sarcoma Viral Oncogene Homolog**. It is a **proto-oncogene**, meaning that it has the **potential to become a cancer-causing gene**.

➤ Impact of Y Chromosome Loss on Bladder Cancer Outcomes:

- In a separate investigation, the **impact of Y chromosome loss on bladder cancer outcomes was observed**.
 - Loss of the Y chromosome in cells happens as men age, enabling cancer cells to evade their immune system
- Loss of the Y chromosome was **found to be associated with poor diagnosis and more aggressive tumours**.
 - The condition **generated a more immunosuppressive tumour microenvironment** by altering the expression of genes involved in immune regulation.
 - For instance, **loss of the Y chromosome increased the expression of PD-L1**, a protein that **inhibits T cell activation** and allows tumour cells to **evade immune attack**.
- However, **Y chromosome loss was found to enhance the response to Anti-PD1 Checkpoint Blockade Therapy**, suggesting a potential treatment avenue for a subset of bladder cancers.
 - This suggests that loss of the **Y chromosome may be a biomarker** for selecting patients who may benefit from this treatment.

Note:



What is a Chromosome?

- **About:** A chromosome is a thread-like structure of **nucleic acids and protein** found in the nucleus of most living cells, **carrying genetic information in the form of genes**.
 - Chromosomes are **essential for cell division, growth and development, and inheritance**.
 - In humans, **each cell normally contains 23 pairs of chromosomes**, for a total of 46.
- **Structure:** Chromosomes are composed of **DNA molecules** that are tightly wound around proteins called **histones**.
 - This combination of DNA and proteins helps to compact and organise the genetic material.
- **Types:** There are two main types of chromosomes: autosomes and sex chromosomes.
 - **Autosomes:** Autosomes are non-sex chromosomes.
 - In humans, there are 22 pairs of autosomes, numbered from 1 to 22.
 - Autosomes contain genes responsible for determining various traits and characteristics, excluding those related to sex determination.
 - **Sex chromosomes:** Sex chromosomes determine the sex of an individual and are **represented by the letters X and Y**.
 - In humans, **females have two X chromosomes (XX), while males have one X and one Y chromosome (XY)**.

Lab-Grown Meat

Why in News?

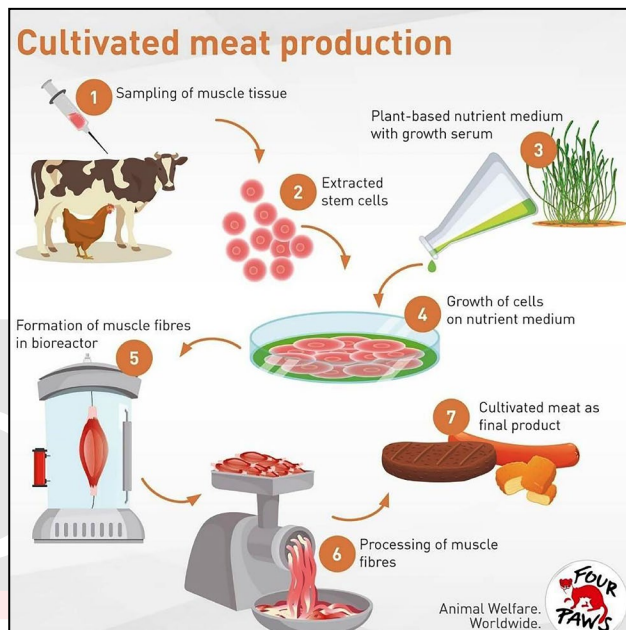
Recently, there has been a significant development in the world of sustainable food production with the United States' **approval of lab-grown meat**, specifically **cell-cultivated chicken**, by two California-based companies.

- Two California-based companies, Good Meat, and Upside Foods received U.S. government approval to produce and sell the '**cell-cultivated chicken**'.

What is Lab-Grown Meat?

- Lab-grown meat, officially known as cell-cultivated meat, refers to meat that is grown in a **laboratory setting using isolated cells derived from animals**.

- These cells are provided with the necessary resources, such as nutrients and a suitable environment, **to replicate and grow into edible meat**.
- The process typically takes place in **bioreactors**, specialized containers designed to support the cellular cultivation process.
- The **first country to approve** the sale of alternative meat was **Singapore** in 2020.



➤ Cell-Cultivated Chicken:

- Cell-cultivated chicken refers to **chicken meat grown** in a laboratory setting using isolated cells that have the resources needed for growth and replication.
- Bioreactors, specialized containers designed to support a specific biological environment, are commonly used to facilitate the cultivation process.
- Once the cells reach a sufficient number, they are **processed, often with additives, to enhance texture and appearance**, and prepared for consumption.

How is Cell-Cultivation

Technique Significant for Meat Production?

- **Climate Mitigation:**
 - Lab-grown meat offers a potential solution to reduce **greenhouse gas emissions** associated with **livestock production**.

Note:

- According to the **Food and Agriculture Organization (FAO)**, livestock production contributes about **14.5% of global anthropogenic GHG emissions**, mainly in the form of **methane** and **nitrous oxide**.
- **Land Use Efficiency:**
 - Cell-cultivated meat requires significantly less land compared to traditional meat production methods.
 - A 2021 report estimated that lab-cultivated meat would use **63% less land in the case of chicken** and **72% in the case of pork**.
- **Animal Welfare:**
 - The development of cell-cultivated meat aims to minimize the need for **animal slaughter**.
 - By producing meat directly from cells, cultivated meat offers the possibility of **reducing animal suffering** and improving animal welfare standards.
- **Food Security and Nutrition:**
 - Lab-grown meat has the potential to address future **food security needs**.
 - Cell-cultivated meat can be **tailored to be healthier and meet specific dietary requirements** such as being designed to **contain less fat**.

What are the Challenges to Cell-Cultivated Meat?

- **Consumer Acceptance:**
 - Achieving **taste, texture, appearance, and cost parity** with conventional meat remains a challenge for cell-cultivated alternatives. Perception of cultured meat as **"artificial" or "unnatural"** may impact consumer willingness to adopt these products.
- **Cost:**
 - The cost of cell-cultivated meat is **expected to remain high**; primarily attributed to the complex and resource-intensive process of cell culturing. Scalability and quality control processes may impose additional costs.
- **Scalability:**
 - Currently, production is limited to small quantities, and **scaling up while maintaining product quality and consistency** is a significant challenge. Developing efficient and **cost-effective bioreactor systems** and finding suitable cell culture media are critical steps in achieving scalability.
- **Resources:**
 - Researchers require **high-quality cells, suitable**

growth mediums, and other resources to ensure the quality of the final product.

- **Environmental Impact Concerns:**
 - Some studies suggest that the environmental impact of cell-cultivated meat production could be higher than traditional meat production if **highly refined growth mediums** are required.
- **Intellectual Property and Patent Issues:**
 - The field of cultivated meat involves numerous **Intellectual Property and Patent** considerations. Companies and researchers are filing patents for various techniques and technologies involved in the production of cultivated meat. Resolving **intellectual property disputes** and ensuring **fair access to technology** will impact the growth and development of the industry.

Radio Telescope

Why in News?

- **Telescopes** are indispensable tools for astronomers, enabling them to observe and study celestial objects.
- Among the various types of telescopes, **radio telescopes** are gaining traction by playing a crucial role in unveiling the mysteries of the universe by detecting radio waves.

What is a Radio Telescope?

- **About:**
 - A **radio telescope** is a device that **detects and analyses radio waves from astronomical objects in the sky**.
 - Radio waves are a **type of electromagnetic radiation that have wavelengths ranging from about 1 millimetre to 10 metres**.
 - They can **penetrate dust and gas clouds that block visible light**, so radio telescopes can reveal hidden structures and phenomena in the universe.
- **Features:**
 - They are typically **situated on the ground rather than in orbit due to their large size**.
 - It consists of two main components: a **large antenna and a sensitive receiver**.
 - The **antenna is usually a parabolic dish that reflects and focuses the incoming radio waves to a focal point**.

Note:



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- The receiver amplifies and converts the radio signals into electrical signals that can be recorded and analysed by computers.

➤ **Significance:**

- It can **operate day and night**, unlike **optical telescopes** that need clear and dark skies.
- It can observe objects that are **too faint or too distant to be seen by optical telescopes**, such as the **cosmic microwave background radiation, pulsars, quasars, and black holes**.
- It can **study the chemical composition and physical conditions of interstellar gas and dust clouds** by detecting the spectral lines of various atoms and molecules.
- It can **measure the magnetic fields and rotation rates of stars and galaxies** by detecting the polarisation of radio waves.

Note:

- A **pulsar (from pulsating radio source)** is a **highly magnetised rotating neutron star** that emits beams of electromagnetic radiation out of its magnetic poles.
 - Most neutron stars are observed as pulsars.
- **Quasars** are **very luminous objects in faraway galaxies** that emit jets at radio frequencies.
 - Among the brightest objects in the universe, a quasar's light outshines that of all the stars in its host galaxy combined, and its jets and winds shape the galaxy in which it resides.
- **Examples of Radio Telescopes:**
 - **Giant Metrewave Radio Telescope (India)**
 - **SARAS 3 (India)**
 - **Atacama Large Millimetre/submillimetre Array (ALMA) (Atacama Desert, Chile)**
 - **Five-hundred-metre Aperture Spherical Telescope (FAST) (China)** (one of the biggest with a 500-metre-wide dish).



Evolution of Eukaryotes from Prokaryotes

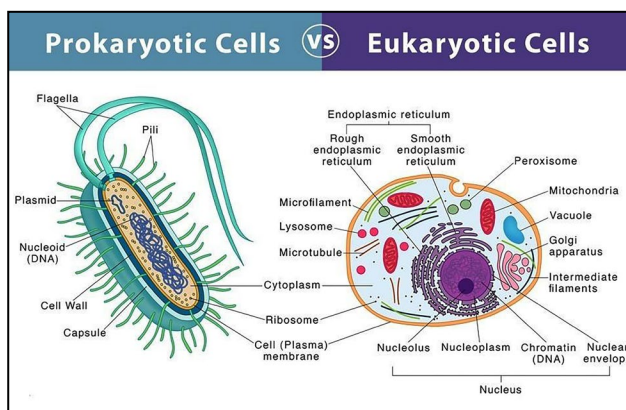
Why in News?

Recently, there has been considerable interest in understanding the **evolution of eukaryotes from prokaryotes**, shedding light on the intriguing question of how complex cells with nuclei and organelles emerged.

- The prevailing theory of **endosymbiosis** suggests that eukaryotes evolved from a symbiotic relationship between an ancient **archaeon** (a primitive group of microorganisms that thrive in extreme habitats) and a **bacterium**.

What are Eukaryotes and Prokaryotes?

- Organisms on planet earth, based on the type of cells, are broadly divided into prokaryotes and eukaryotes.
 - **Prokaryotes:**
 - Prokaryotes are organisms that **lack a true nucleus and membrane-bound organelles**. Their genetic material, typically a **circular DNA molecule**, is present in the cytoplasm without being enclosed within a nuclear membrane.
 - Prokaryotes include **bacteria and archaea**.
 - Key features include **small, simple cells without a nucleus** or organelles.
 - **Eukaryotes:**
 - Eukaryotes are organisms that have cells containing a **well-defined nucleus enclosed within a membrane**.
 - Eukaryotic cells have a variety of membrane-bound organelles, such as **mitochondria, endoplasmic reticulum, Golgi apparatus**, and



Note:

a complex network of internal membranes. These organelles perform specialized functions within the cell.

- Key features include **large, complex cells with a nucleus** and various organelles.

How did Endosymbiosis Lead to Eukaryotes?

- Endosymbiosis is a process where **one organism lives inside another** and both benefit from the relationship.
- The endosymbiotic theory suggests that eukaryotes evolved from a **small archaeon engulfing a bacterium**.
 - The archaeon protected the bacterium and provided a stable environment, while the **bacterium supplied energy to the archaeon**.
- Over time, they became **dependent on each other** and formed a **new type of cell called a eukaryote**.
 - The engulfed **bacterium became the mitochondrion**, which produces energy for the cell.
- In plants, another endosymbiotic event occurred with a **cyanobacterium becoming the chloroplast**, responsible for **photosynthesis**.
 - This symbiotic relationship allowed eukaryotes to grow larger, become more complex, and adapt to different environments.

Paper-based Supercapacitor for Rapid Device Charging

Why in News?

Scientists at the **Gujarat Energy Research and Management Institute (GERMI)** have achieved a breakthrough in **energy storage technology** with the development of a **paper-based supercapacitor**.

- This cutting-edge supercapacitor, **derived from seaweed**, boasts remarkable attributes such as **being lightweight, biodegradable**, and **capable of fully charging a device within a mere 10 seconds**.

What is a Paper-based Supercapacitor?

- **About:**
 - The paper-based supercapacitor developed by GERMI researchers is the **thinnest and most lightweight of its kind**.
 - **By leveraging cellulose nanofibers derived from seaweed**, the team successfully created

an anodic paper supercapacitor that exhibits exceptional tensile strength, performance, and cost-effectiveness.

Applications and Business Prospects:

- The applications of this **innovative supercapacitor are vast, spanning electronics, memory backup systems, airbags, heavy machinery, and electric vehicles**.
- Consequently, it presents a **lucrative business prospect for industries seeking high-performance energy storage solutions**.
 - The technology's versatility and eco-friendly nature make it an attractive option for both manufacturers and consumers.

The Potential of Marine Cellulose:

- The paper supercapacitor owes its remarkable properties to the **marine cellulose-based material derived from seaweed**.
- This **material holds immense potential for integration into various smart electronic devices**.
- Additionally, the **cultivation of seaweed can serve as a source of revenue for coastal communities**, creating economic opportunities and sustainable development.

What is a Supercapacitor?

- A supercapacitor is an electrochemical charge storage device. They are also known as ultracapacitors.
 - It has significant advantages such as high-power density, long durability, and ultrafast charging characteristics as compared to conventional capacitors and **Lithium-Ion batteries (LIB)**.
- Main components of supercapacitors include **electrode, electrolyte, separator, and the current collector**.

What are Seaweeds?

- **About:**
 - **Seaweeds** are macroalgae attached to rock or other substrata and are found in coastal areas.
 - They are classified as **chlorophyta (green), rhodophyta (red) and phaeophyta (brown) on the basis of their pigmentation**.
 - Among them, chlorophyta holds more potential components — **carbohydrates, lipids, proteins and bioactive compounds**.

Note:



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➤ **Significance:**

- **Nutritional Value:** Seaweeds are rich in essential nutrients, including **vitamins**, minerals and dietary fibre.
 - **For Medicinal Purpose:** Many seaweeds contain **anti-inflammatory** and **anti-microbial** agents. Certain seaweeds possess powerful **cancer-fighting** agents.
 - **Bioindicator:** When waste from agriculture, industries, aquaculture and households are let into the ocean, it **causes nutrient imbalance leading to algal blooming**, the sign of marine chemical damage.
 - **Seaweeds absorb the excess nutrients and balance out the ecosystem.**
 - **Oxygen Production:** Seaweeds, as **photosynthetic** organisms, play a vital role in marine ecosystems by producing oxygen through photosynthesis, sustaining the respiration and survival of marine life.
 - **Cellulose Content:** Green seaweed that is collected from the Porbandar coast of Gujarat has a high amount of a particular type of cellulose in its cell wall.
 - Cellulose is found to be the **most suitable biopolymer material for manufacturing paper-based electrode materials** such as batteries for energy storage applications.
 - **Cellulose itself is an insulating material that requires to be coated with conductive material** to make a paper-based energy storage device.
- **Seaweed Cultivation:**
- Out of the global seaweed production of **around 32 million tons of fresh weight valued around USD 12 billion**.
 - China produces approximately 57%, Indonesia 28% followed by South Korea, whereas India has a mere share of ~0.01-0.02%.
 - By an estimate, **if cultivation is done in ~10 million hectares or 5% of the Exclusive Economic Zone area of India**, it can provide employment to ~ **50 million people**, contribute to national GDP, lead to ocean productivity, abates algal blooms, sequesters millions of tons CO₂, and could produce **bio-ethanol** of 6.6 billion litres.

Manipulating Phonons for Quantum Computing

Why in News?

In a recent study, researchers from IBM have developed an **Acoustic Beam-Splitter** to manipulate **Phonons** to be used for **Quantum Computing**, potentially solving complex problems beyond the reach of conventional Computers.

- Beam-splitters, commonly used in **optics research**, **split a beam of light into two parts**. The working of a beam-splitter draws on quantum physics.

What are Phonons?

- Phonons are packets of vibrational energy and can be **considered as the quantum equivalent of sound**.
- Similar to **photons, which are packets of light energy**, phonons can potentially serve as units of information in quantum computing (qubits).
 - Researchers are investigating ways **to manipulate and control phonons for quantum computing purposes**.
 - The challenge lies in identifying methods to manipulate phonons analogous to the manipulation of electrons or photons.

What is Acoustic Beam-Splitter?

- It is a small device shaped like a **comb with metal bars**. It was placed in a short channel made of lithium niobate.
- At each end of the channel, there was a **superconducting qubit that could emit** and detect individual Phonons.
- The whole setup was kept at very low temperatures. The phonons represented the collective **vibration of billions of atoms and behaved similarly** to how photons interact with an optical beam-splitter.
- When a phonon was emitted from one side, it was **reflected half the time and transmitted to the other side** the other half.
- If photons were emitted from both sides at the same time, they **all ended up on one side**.
- The data confirmed that **such two-phonon interference occurred, which** shows phonons act just as quantum as photons.

Note:

What is**Quantum Computing?****➤ About:**

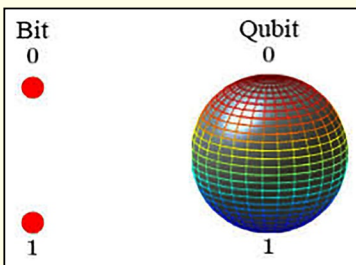
- Quantum computing is a **rapidly emerging technology that harnesses** the laws of quantum mechanics to solve problems too complex for classical computers.
- Quantum mechanics is a **subfield of physics that describes the behavior of particles** — atoms, electrons, photons, and almost everything in the molecular and sub molecular realm.
- It is an exciting new technology that will **shape our world tomorrow by providing us with an edge** and a myriad of possibilities.
- It is a fundamentally different way of processing information compared to today's classical computing systems.

➤ Features:

- While today's classical computers store information as binary 0 and 1 states, quantum computers draw on the fundamental laws of nature to **carry out calculations using quantum bits (Qubits)**.
- Unlike a bit that has to be a 0 or a 1, a qubit can be in a **combination of states, which allows for exponentially larger calculations** and gives them the potential to solve complex problems which even the most powerful classical supercomputers are not capable of.

➤ Significance:

- Quantum computers can tap into the quantum mechanical phenomenon to manipulate information and are **expected to shed light on processes of molecular and chemical interactions**, address difficult optimization problems, and boost the power of artificial intelligence.
- These could open the door to new scientific discoveries, **life-saving drugs, and improvements in supply chains**, logistics and the modelling of financial data.



Leptospirosis and Dengue Outbreaks

Why in News?

Leptospirosis is a potentially **fatal bacterial disease** that has become more **prevalent during the monsoon months**, posing a significant occupational hazard for those working in agricultural settings or in sanitary services that bring them into contact with contaminated water.

- Furthermore, public health experts are sounding the alarm about a **potential severe dengue outbreak** and emphasizing the need for enhanced clinical and virological surveillance. Changes in **circulating dengue virus (DENV) serotypes** could lead to more severe and life-threatening conditions.
- Thiruvananthapuram district, Kerala reported that 70% of dengue case samples in 2022 were DENV3, with some cases of DENV4.

What is Leptospirosis?**➤ About:**

- Leptospirosis is caused by the **bacterium Leptospira interrogans**, which is primarily found in the **urine of infected animals**.
- **Wild and domestic animals**, including rodents, cattle, pigs, and dogs, serve as carriers of the disease.

➤ Symptoms:

- Leptospirosis can manifest with a range of symptoms, from a **mild flu-like illness to life-threatening conditions**.
- Common symptoms include **sudden fever, chills, and headache**, or sometimes **no symptoms at all**.
- Severe cases can lead to **organ dysfunction, affecting the liver, kidneys, lungs, and the brain**.

➤ Transmission:

- The transmission cycle begins with infected animals **shedding leptospira in their urine**.
- Individuals who come into **direct contact with infected animal urine** or **indirectly through contaminated soil and water** are at risk.
- People with **cuts or abrasions on their skin** have a higher likelihood of contracting leptospirosis.

Note:



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- **Prevention:**
 - **Preventing animal infection, Hygienic animal-keeping conditions**, proper waste management, and improved sanitation facilities are essential to reduce the spread of leptospirosis and minimize economic losses for farmers.
 - Adopting a **'One Health' approach**, which considers the **interconnectedness of human, animal, plant, and environmental health**, is crucial in leptospirosis control.
- **Misconceptions About Leptospirosis:**
 - One common misconception is associating **leptospirosis solely with rats**, which is not accurate as it can be transmitted by multiple animal reservoir hosts.

What is Dengue?

- **About:**
 - Dengue is a **mosquito-borne tropical disease** caused by the dengue virus (**Genus Flavivirus**), transmitted by several species of mosquito within the genus **Aedes**, principally **Aedes aegypti**.
 - This mosquito also transmits **chikungunya** and **Zika infection**.
- **Serotypes of Dengue:**
 - There are 4 distinct, but closely related, serotypes (separate groups within a species of microorganisms that all share a similar characteristic) of the virus that cause dengue (**DEN-1, DEN-2, DEN-3 and DEN-4**).
- **Symptoms:**
 - Sudden high fever, severe headaches, pain behind the eyes, severe bone, joint, and muscle pain, etc.
- **Dengue Vaccine:**
 - Researchers at **India's National Centre for Biological Sciences**, in collaboration with nine other institutions in India, Africa, and the US, have developed **India's first and only DNA vaccine candidate for dengue fever**.
 - The **dengue vaccine CYD-TDV or Dengvaxia** was approved by the US Food & Drug Administration in 2019, the **first dengue vaccine to get the regulatory nod in the US**.
 - **Dengvaxia** is basically a **live, attenuated dengue virus** that has to be administered in people of ages **9 to 16** who have laboratory-confirmed

previous dengue infection and who live in endemic areas.

- **Challenges in Vaccine Development:**
 - Developing an effective dengue vaccine is challenging due to the **four closely related virus serotypes**, each **interacting differently with antibodies**. An ideal vaccine should **target all serotypes** while **avoiding antibody-dependent enhancement (ADE)**, where antibodies can aid the virus, causing severe disease.

Red Supergiant Star Betelgeuse

Why in News?

The **bright red star Betelgeuse**, known as **'Thiruvathirai' or 'Ardra'** in Indian astronomy, captivates observers with its prominent position in the **constellation Orion**.

- Recent research conducted by Japanese and Swiss researchers has shed light on the **star's pulsation patterns**.

What is Betelgeuse's Pulsation?

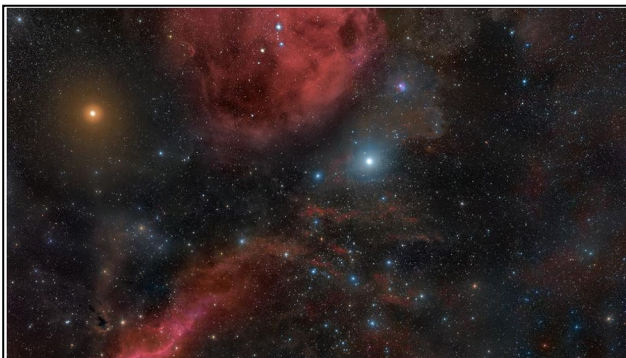
- **About Betelgeuse:**
 - Betelgeuse is a **red supergiant star that is nearing the end of its life**. It is the **second-brightest star in the constellation of Orion**, after Rigel.
 - Scientists noticed that **Betelgeuse was mysteriously dimming in late 2019** following a **traumatic outburst caused by the star blowing off a large portion of its visible surface**.
 - Betelgeuse varies in brightness because of two main factors: changes in its surface temperature and changes in its size.
 - As a red supergiant, **Betelgeuse has a very unstable outer layer that is prone to convection and pulsation**.
- **The Pulsating Mechanism:**
 - The pulsation of Betelgeuse refers to the **periodic contraction and expansion of the star**.
 - Researchers have compared the observed pulsation of Betelgeuse to theoretical estimates, **indicating that the star is in its late carbon-burning stage**.

Note:

- Pulsation periods provide valuable insights into the **star's radius, luminosity, and mass**, affirming its current phase of core carbon-burning.
- Similar to a pot's lid lifting to release steam, **red giant stars expand and contract due to heating and cooling of hydrogen** in their outermost layers.
- The **star's outermost envelope contains cooler neutral hydrogen**, which **absorbs heat from the interior, causing the star to expand**.
- As the **temperature rises, hydrogen becomes ionised and can absorb more heat**, leading to a forceful expansion and ejection of the outermost shell.
- The cyclic nature of this process results in **periodic dimming and brightening of the star, observable from a distance**.

➤ Stages of Evolution:

- Stars like Betelgeuse fuse hydrogen into helium during their initial stages, which helps maintain a balance between **gravity** and energy release.
- Massive stars like Betelgeuse **run out of hydrogen fuel in a few crore years**, when they switch to using helium to make carbon. Helium runs out in about **10 lakh years**.
- As each stage progresses, the **burning of elements becomes faster, with carbon burning in a few hundred years** and silicon burning in about a day.
 - Afterwards **red giants briskly consume one by one the elements of the periodic table**, until finally their core brims with iron.
- Once the core is rich in iron, the temperature and pressure within the star drop. With nothing to stop it, **gravity compresses the core and turns it into a neutron star or a black hole**.
- Betelgeuse's late-**carbon** stage signifies the terminal phase before the star's imminent collapse.



Betelgeuse is visible in this image of the Orion constellation, taken on October 23, 2010, as the big orange star at the top left. | Photo Credit: Rogelio BernalAndreo (CC BY-SA 3.0)

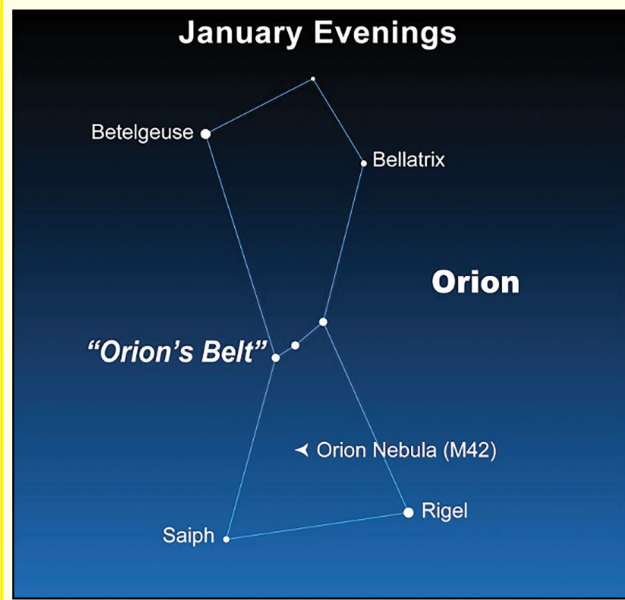
What is the Constellation Orion?

➤ Constellation:

- A **constellation is an area on the celestial sphere** in which a group of visible stars forms a perceived pattern or outline, **typically representing an animal, mythological subject, or inanimate object**.
 - They are useful in assisting astronomers and navigators to locate certain stars
- Officially, there are **88 recognized constellations in the night sky**. These constellations were defined and established by the **International Astronomical Union (IAU)**.
 - **IAU was founded in 1919**, headquartered in Paris, France.

➤ Constellation Orion:

- It is a **prominent constellation that can be seen throughout the world**.
 - It is located on the **celestial equator** and is **best visible in the evening sky from January to April in the Northern Hemisphere**, and from **November to February in the Southern Hemisphere**.



Miyawaki Plantation Method

Why in News?

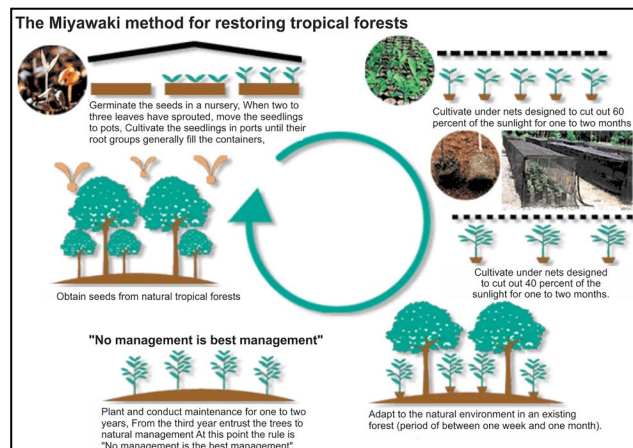
Prime Minister of India in his recent episode of 'Mann ki Baat', discussed the concept of **Miyawaki plantation**.

Note:

He shed light on the Japanese technique of establishing dense **urban forests** in limited spaces.

- He also mentioned the inspiring story of Raafi Ramnath, a teacher from Kerala, who utilized the Miyawaki method to convert a barren piece of land into a miniature forest named Vidyavanam.

What is the Miyawaki Plantation Method?



- **About:**
 - It was named after Japanese botanist Akira Miyawaki, this method involves planting two to four different types of indigenous trees within every square metre.
 - The methodology was developed in the 1970s, with the basic objective to densify green cover within a small parcel of land.
 - In this method, the trees become self-sustaining and they grow to their full length within three years.
 - The plants used in the Miyawaki method are mostly self-sustaining and don't require regular maintenance like manuring and watering.
- **Significance:**
 - The dense green cover of indigenous trees plays a key role in absorbing the dust particles of the area where the garden has been set up. The plants also help in regulating surface temperature.
 - Some of the common indigenous plants that are used for these forests include Anjan, Amala, Bel, Arjun and Gunj.
 - These forests encourage new biodiversity and an ecosystem which in turn increases the fertility of the soil.

Miyawaki Forest Method in Mumbai

- Over the years, the cost-effective Miyawaki Plantation Method has become the go-to solution to restore the green cover in a space-starved city like Mumbai.
- The Brihanmumbai Municipal Corporation (BMC) has been implementing the Miyawaki forest approach in various vacant land areas of Mumbai to combat **climate change**, **reduce pollution levels**, and enhance the city's green cover.
 - 64 Miyawaki forests have been planted in Mumbai so far.

Solar Ultraviolet Imaging Telescope

Why in News?

The **Solar Ultraviolet Imaging Telescope (SUIT)**, developed by Pune's Inter-University Center for Astronomy and Astrophysics (IUCAA), has been delivered to the **Indian Space Research Organisation (ISRO)**.

- This unique space telescope will be integrated with ISRO's **ADITYA-L1 mission**, set to launch in mid-August 2023.

What is SUIT?

- **About:**
 - SUIT aims to study the Sun's **ultraviolet (UV) emissions** and capture high-resolution images of the **Sun's atmosphere**, known as the **corona**, in various UV wavelengths.
 - It will operate in the **far and near ultraviolet regions**, covering wavelengths of 200-400 nanometers.
 - It will observe the **hotter and more dynamic regions of the Sun's atmosphere**, such as the **transition region and the corona**.
- **Significance:**
 - The Sun is one of the **most difficult things to study outside Earth** due to its high emissions and radiation.
 - SUIT will enable scientists to **unravel the secrets of the Sun and its impact on Earth and other planets**.

Note:

- SUIT will also measure the UV radiation hazardous for skin cancer.
- SUIT will monitor the Sun's activity and provide early warning of potential solar flares and coronal mass ejections (CMEs), which can affect satellites, communication systems, power grids and human health on Earth.



What is Aditya-L1 Mission?

➤ About:

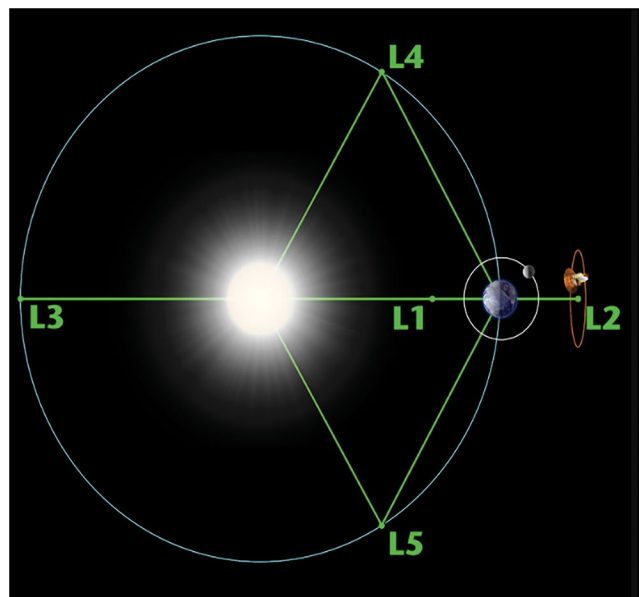
- The ADITYA-L1 mission will be dedicated to studying the Sun and will fly approximately 1.5 million kilometers from Earth to the Lagrange point 1 (L1), one of the five favorable spots for observing the Sun.
- The mission is expected to be launched using a Polar Satellite Launch Vehicle (PSLV) rocket.
- It will provide regular images and updates on the Sun's surface phenomena and space weather.

➤ Features:

- ADITYA-L1 will carry seven different payloads capable of studying various phenomena on the Sun across the electromagnetic spectrum and solar wind. The 7 payloads include:
 - Visible Emission Line Coronagraph (VELC)
 - Solar Ultraviolet Imaging Telescope (SUIT)
 - Solar Low Energy X-ray Spectrometer (SoLEXS)
 - Aditya Solar wind Particle Experiment (ASPEX)
 - High Energy L1 Orbiting X-ray Spectrometer (HEL1OS)
 - Plasma Analyser Package for Aditya (PAPA)
 - Advanced Tri-axial High Resolution Digital Magnetometers

What is L1?

- "L1" refers to the **Lagrange point 1**. Lagrange points are specific points in space where the gravitational forces of two large bodies, such as the Sun and the Earth, balance the centrifugal force felt by a smaller body.
 - They are named in honor of Italian-French mathematician **Joseph-Louis Lagrange**.
 - These can be used by spacecraft to reduce fuel consumption needed to remain in position.
- L1 is one of the **five Lagrange points in the Sun-Earth system**. Of the five Lagrange points, **three are unstable and two are stable**.
 - The unstable Lagrange points - labeled **L1, L2 and L3** - lie along the line connecting the two large masses.
 - The stable Lagrange points - labeled **L4 and L5** - form the apex of two equilateral triangles that have the large masses at their vertices.
 - **L4 leads the orbit of earth and L5 follows.**
- The **L1 point of the Earth-Sun system affords an uninterrupted view of the sun** and is currently home to the **Solar and Heliospheric Observatory Satellite**.
 - The **L2 point of the Earth-Sun system** was the home to the **WMAP spacecraft**, current home of **Planck**, and future home of the **James Webb Space Telescope**.



Note:

Impact of Spaceflight on Brain Fluid Dynamics

Why in News?

Recently, a study was published in Scientific Reports, which sheds light on the **effects of Spaceflight on the Brain**, particularly concerning Longer Missions and the recovery period between flights.

- The study involved **MRI (Magnetic Resonance Imaging)** scans of 30 astronauts before and after spaceflight. These participants encompassed various mission durations, including two-week missions, six-month missions, and longer expeditions.

What are the Key Highlights of the Study?

- **Spaceflight-Induced Brain Changes:**
 - The extended stays in **space lead to fluid changes in the brain**, with ventricles—cavities filled with cerebrospinal fluid—expanding progressively.
 - Cerebrospinal fluid is a **clear, colorless fluid** that surrounds and protects the brain and spinal cord. It is produced in the **ventricles of the brain and circulates throughout the central nervous system**.
- **Recovery Time between Missions:**
 - Astronauts who had over three years of recovery time experienced an **increase in ventricular volume** after their most recent mission.
 - Conversely, those with **shorter recovery periods demonstrated minimal** to no ventricular enlargement after spaceflight.
- **Association between Inter-Mission Delay and Brain Changes:**
 - Longer inter-mission delays **were linked to greater increases in left and right lateral and third ventricle** volumes following spaceflight.
 - However, the **fourth ventricle exhibited the opposite pattern**, with longer inter-mission intervals correlating with **greater volumetric decreases after space travel**.

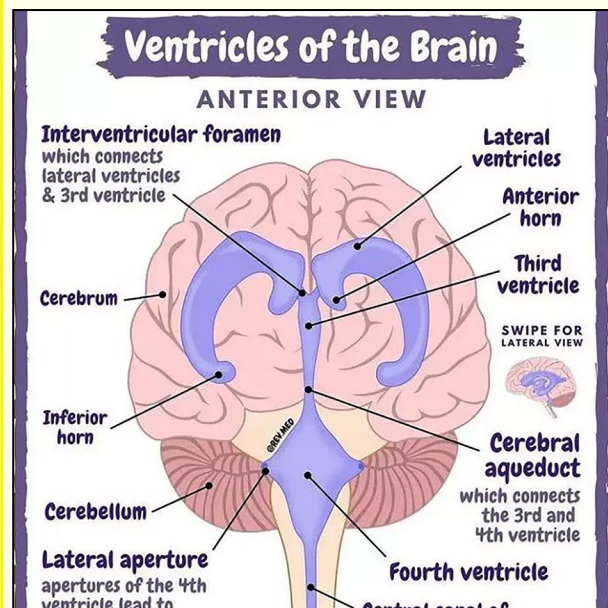
What are Brain Ventricles?

About:

- Brain ventricles are cavities within the brain that produce and store **Cerebrospinal Fluid (CSF)**,

which surrounds the brain and spinal cord, cushioning them and **protecting them from trauma**.

- They are also responsible for **removing waste and delivering nutrients** to your brain.
- **There are Four Brain Ventricles:**
 - The first and second ventricles are lateral ventricles. These C-shaped structures are located on each side of the cerebral cortex, the **wrinkly outer layer of Brain**.
 - The **third ventricle is a narrow, funnel-shaped** structure situated between the **right and left thalamus**, just above your brain stem.
 - The fourth ventricle is a **diamond-shaped structure that runs alongside** the brain stem.
 - It has four openings through which cerebrospinal fluid drains into an area surrounding the brain (subarachnoid space) and the central canal of the spinal cord.



Functions:

- **CSF Circulation:** The ventricles, specifically the lateral ventricles, are interconnected with the third ventricle in the midline of the brain. CSF flows through these ventricles and **circulates around the brain and spinal cord, helping to remove waste products** and regulate the extracellular environment.
- **Maintenance of Intracranial Pressure:** The ventricles help maintain the appropriate **pressure within the brain**. Any disruption in the production, circulation, or absorption of CSF can lead to an imbalance in intracranial pressure, which may result in conditions like hydrocephalus.

Note:



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Transgenic Crops

Why in News?

Recently, Gujarat, Maharashtra and Telangana, have deferred a proposal, approved by the **Centre's Genetic Engineering Appraisal Committee (GEAC)**, to test a new kind of Transgenic Cotton Seed that contains a gene, Cry2Ai.

- Gene Cry2Ai purportedly makes cotton **resistant to pink bollworm**, a major pest. The conflict shows that a **broad acceptance of genetically modified crops** continues to be elusive.

Note: Agriculture being a State subject means that, in most cases, companies interested in testing their seeds need **approvals from the States for conducting such tests**. Only Haryana gave permission for such tests.

- Telangana requested an extension to **consider the proposal and later responded that trials would not be allowed in the current cropping season**. Gujarat, on the other hand, simply stated that the proposal was unacceptable without furnishing reasons.

What are Transgenic Crops?

➤ About:

- Transgenic crops are plants that have been modified through genetic engineering techniques. These crops have had **specific genes inserted into their DNA** to give them new characteristics or traits that are not naturally found in the species through traditional breeding methods.
- **GMO vs Transgenic Organisms:**
- Genetically Modified Organism (GMO) and transgenic organism are two terms that are used interchangeably.
- However, there is a **slight difference** between GMO and transgenic organism. Although both have altered genomes, a transgenic organism is a **GMO containing a DNA sequence or a gene from a different species**. While a GMO is an animal, plant, or microbe **whose DNA has been altered** using genetic engineering techniques.
- Thus, all transgenic organisms are GMOs, but not all GMOs are transgenic.

➤ Status in India:

- In India, only **Cotton** is currently commercially cultivated as a **GM crop**. Trials are underway for

other crops like brinjal, tomato, maize, and chickpea using transgenic technology.

- The GEAC approved the **environmental release of GM mustard hybrid DMH-11, bringing it closer to full commercial cultivation**.
- However, there is an ongoing legal case in the **Supreme Court** questioning the permission for transgenic food crops. They seek a **stay on GM mustard, citing concerns about farmers using banned herbicides**.
- Previous instances include the GEAC's approval of GM mustard in 2017 with additional tests and the government's indefinite moratorium on GM brinjal in 2010.

How Are Genetic

Modified Crops Regulated in India?

- **Regulation:** In India, the regulation of all activities related to GMOs and products are **regulated by the Union Ministry of Environment, Forest and Climate Change (MoEFCC)** under the provisions of the **Environment (Protection) Act, 1986**.
- **Genetic Engineering Appraisal Committee (GEAC)** under MoEFCC is authorised to review, monitor and approve all activities including import, export, transport, manufacture, use or sale of GMO.
 - GEAC recently approved commercial cultivation of **genetically modified mustard**.
- GM foods are also subjected to regulations by the **Food Safety and Standards Authority of India (FSSAI)** under the Food Safety and Standards Act, 2006.
- **Acts and Rules that Regulate GM Crops in India:**
 - Environment Protection Act, 1986 (EPA),
 - Biological Diversity Act, 2002,
 - Plant Quarantine Order, 2003,
 - GM policy under Foreign Trade Policy, Food Safety and Standards Act, 2006,
 - Drugs and Cosmetics Rule (8th Amendment), 1988.

What is the Process

of Regulating Transgenic Crops in India?

- Developing transgenic crops involves **inserting transgenic genes into plants to achieve a sustained, protective response**

Note:



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- The process involves a mix of science and chance.
- **Safety assessments by committees are conducted** before open field tests.
- Open field tests are done at agricultural universities or **Indian Council for Agricultural Research (ICAR)**-controlled plots.
- Transgenic plants **must be better than non-GM variants and environmentally safe** for commercial clearance.
- **Open field trials assess suitability** across multiple seasons and geographical conditions.

What is the Significance of Genetic Modification (GM) Technique?

- **Safer and Affordable Vaccines:** The GM has revolutionized the **pharmaceutical sector by enabling the production of safer** and more affordable vaccines and therapeutics. It has facilitated the **mass production of drugs like human insulin**, vaccines, and growth hormones, making life-saving pharmaceuticals more accessible.
- **Control Weeds:** GM technology has also played a crucial role in **developing herbicide-tolerant crops**. **Crops like soybean, maize, cotton**, and canola have been genetically modified to withstand specific broad-spectrum herbicides, allowing farmers to effectively control weeds while preserving the cultivated crop.
- **Ensuring Food Security:** GM crops are being developed to adapt to **changing environmental conditions**. Researchers are working on strains of rice, maize, and wheat that can tolerate longer droughts and

wetter monsoon seasons, ensuring food security in challenging climates.

- **Solution for Growing Crops in Salty Oils.** GM has also been **used to create salt-tolerant plants, offering** a potential solution for growing crops in salty soils. By inserting genes that remove **sodium ions from water and maintain cell balance**, plants can thrive in high-salt environments.

What are the Concerns related to Transgenic Crops?

- **Lack Nutritional Value:** GM foods can sometimes **lack nutritional value despite their increased production** and pest resistance focus. This is because the emphasis is often placed on enhancing certain traits rather than nutritional content.
- **Risks to Ecosystems:** GM production can also **pose risks to ecosystems and biodiversity**. It may disrupt gene flow and harm indigenous varieties, leading to a loss of diversity in the long run.
- **Trigger Allergic Reactions:** Genetically modified foods have the potential to **trigger allergic reactions** since they are biologically altered. This can be **problematic for individuals accustomed** to conventional varieties.
- **Endangered Animals:** Wildlife is also at risk due to GM crops. For instance, genetically modified plants used for producing plastic or pharmaceuticals can **endanger animals like mice or deer** that consume crop debris left in fields after harvest.



Note:

Environment & Ecology

Highlights

- Paris Global Climate Financing Summit
- Bald Eagle
- Airlines' Greenwashing and Contributing to Carbon Pollution
- Bonn Climate Meet
- Alligator Gar Fish
- World Desertification Day 2023

Paris Global Climate Financing Summit

Why in News?

The Summit for a New Global Financing Pact was recently held in Paris with an objective of **tackling the lack of financial support for developing countries**.

- The Summit was announced at the **27th Conference of Parties (COP27)** of the **UNFCCC**. The summit was also attended by India's Finance Minister.

What are the Key Highlights of the Summit?

- **The Scale of Crises Faced by Developing Countries:**
 - Developing countries are grappling with a combination of crises, including poverty, escalating debt levels, and inflation **triggered by events such as the Russia-Ukraine Conflict**.
 - Besides economic challenges, developing nations are under **pressure to decarbonise their economies** while lacking sufficient **Climate Finance**.
- **Demands from the Global South:**
 - Leaders from the **Global South** demand that **Multilateral Development Banks (MDB)** address **transboundary challenges** and provide increased resources for development, including climate finance.
 - Developing countries call for more **concessional and grant financing** to address their debt burdens, also **advocating for debt reductions** particularly for the least developed nations.
 - While acknowledging the potential of private sector investment, they emphasise that **long-term development funds are necessary** to complement private sector financing.

Announcements at the Summit:

- The Summit announced the **unlocking of an additional USD 200 billion** lending capacity for emerging economies.
 - The **World Bank** introduced **disaster clauses to suspend debt payments** during extreme weather events.
- The **IMF** announced the allocation of USD 100 billion in **SDRs (Special Drawing Rights)** for vulnerable countries, although some SDRs still require approval from the US Congress.
- A new **Just Energy Transition Partnerships (JETP)** deal worth 2.5 billion Euros was announced for Senegal, aimed at increasing the share of renewable energy in the country's electricity mix.
- Zambia reached a **USD 6.3 billion debt restructuring deal**, and calls were made for a **Global Expert Review on Debt, Nature, and Climate**.
- The EU called for **increased coverage of global emissions by Carbon Pricing Mechanisms** and allocating a portion of revenues to climate finance.
- The Summit indicated that the **long-awaited USD 100 billion climate finance** goal would be achieved this year.
 - This commitment was made at **UNFCCC COP 15 in Copenhagen** in 2009.

What is Climate Finance?

➤ About:

- It refers to **local, national, or transnational financing**—drawn from public, private and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change.

Note:

➤ **Global Discussions:**

- The **UNFCCC, Kyoto Protocol, and the Paris Agreement** call for financial assistance from Parties with more financial resources (Developed Countries) to those that are less endowed and more vulnerable (Developing Countries).
 - This is in accordance with the principle of **“Common but Differentiated Responsibility and Respective Capabilities” (CBDR)**.
- In **UNFCCC COP26**, new financial pledges to support developing countries in achieving the global goal for adapting to the effects of climate change were made.

➤ **Significance:**

- **Climate Change Impact Mitigation and Adaptation:**
 - Climate finance is **needed for climate impact mitigation**; large-scale investments are required to significantly reduce emissions.
 - It is **equally important for adaptation**; significant financial resources are needed to adapt to the adverse effects of a changing climate.
 - Climate finance is critical to achieve the goal of limiting the rise in the earth's average temperature to **below 2°C over pre-industrial levels, (2018 IPCC report)**.

➤ **Recognition of Responsibilities:**

- It **recognises that the contribution of countries to climate change and their capacity** to prevent it and cope with its consequences vary enormously.
- Hence, **developed countries should also continue to take the lead in mobilising climate finance** through a variety of actions, including supporting country-driven strategies and taking into account the needs and priorities of developing country Parties.

What are Initiatives regarding Climate Finance?➤ **Global:**

- In 2010, the 194 member countries agreed to create the Green Climate Fund (GCF) at UNFCCC COP 16.
 - GCF was established to support the developing countries in their efforts to challenge climate change by aiding them in shifting to low-emission and climate-resilient development regime.

- It is headquartered in Incheon, Republic of Korea.
- At the COP27 summit, delegates from the UN agreed to create a **‘Loss and Damages’ fund** to compensate the **most vulnerable countries** for their losses due to **climate-related disasters**.

➤ **India:**

- **National Adaptation Fund for Climate Change (NAFCC):**
 - It was established in 2015 to meet the cost of adaptation to climate change for the State and Union Territories of India that are particularly vulnerable to the adverse effects of climate change.
- **National Clean Energy Fund:**
 - It was created through the **Finance Bill 2010-11** by the recommendation of **Cabinet Committee of Economic Affairs (CCEA)** to promote clean energy and funded through an initial **carbon tax** on the use of coal by industries.
 - It is governed by an Inter-Ministerial Group with the Finance Secretary as the Chairman.
 - Its mandate is to fund research and development of innovative **clean energy technology** in the fossil and non-fossil fuel-based sectors.
- **National Adaptation Fund:**
 - The fund was established in **2014 with a corpus of Rs. 100 crores** with the aim of bridging the gap between the need and the available funds.
 - The fund is operated under the Ministry of Environment, Forests, and Climate Change (MoEF&CC).

Bald Eagle

Why in News?

The **American bald eagle** (National bird of the US since 1782) **was taken off the endangered species list in 2007**. Since then, their population has steadily increased, which is **considered as one of the biggest success stories in the history of conservation**.

- A **2021 report by the US Fish and Wildlife Service** revealed that the number of bald eagles in the wild has **quadrupled since 2009**.

Note:



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What is there to Know About Bald Eagles?

➤ About:

- The scientific name of the bald eagle is *Haliaeetus leucocephalus*.



➤ Habitat:

- The bald eagle's **natural range covers most of North America**, including most of Canada, all of the continental US, and northern Mexico.
- It is the **only sea eagle endemic to North America**.

➤ Characteristics:

- The average **life span of bald eagles is 20 to 30 years**.
- Bald eagles **build their nests at the very top of tall trees** so the eggs will be safe.
- **Female bald eagles are a bit bigger than the males**.

➤ Feeding Pattern:

- Besides live fish, bald eagles also **prey on other birds**, small mammals, snakes, turtles, and crabs, and **they readily eat carrion** (decaying flesh of dead animals).

➤ Protection Status:

- **IUCN Status:** Least Concern

Note: The ban on **Dichloro-diphenyl-trichloroethane (DDT)** in 1972 by the US was a crucial step towards protecting the bald eagle and other wildlife species from the harmful effects of this pesticide.

- DDT is an **insecticide used in agriculture**. Some countries outside the US still use DDT to control mosquitoes that spread **malaria**.

Airlines' Greenwashing and Contributing to Carbon Pollution

Why in News?

A lawsuit has been filed against **Delta Air Lines in the US**, accusing the company of engaging in **Greenwashing** by making false and misleading claims about its Sustainability Efforts and being a "Green" and carbon-neutral airline.

- The airline claimed to be carbon neutral from March 2020 and offered to offset the carbon emissions from customers' flights.

- However, media reports and investigations have highlighted **loopholes and inaccuracies in Delta's carbon offsetting process**.

What is Greenwashing?

- The term greenwashing was first used in **1986 by Jay Westerveld, an American environmentalist and researcher**.
- Greenwashing is the practice in which **firms and governments mark all kinds of activities as climate-friendly**, as something that would lead to emissions reduction, or avoidance of emissions.
 - Many of these claims are **unverifiable, misleading, or dubious**.
 - While it helps in boosting the image of the entity, they do nothing in the fight against **climate change**.
 - Several multinational corporations, including oil giants like Shell and BP, and Coca Cola have faced accusations of greenwashing.
- Greenwashing is prevalent across a **whole range of environmental activities**.
 - Developed countries are **often accused of greenwashing** their normal business investments in developing countries by highlighting climate co-benefits of the financial flows, sometimes with very little justification.
- Greenwashing is **considered an unfair trade practice under the Consumer Protection Act, 2019** in India, which prohibits misleading claims, but implementation of these regulations remains a challenge.

What are the Concerns

Related to Airlines in Carbon Pollution?

➤ Major Airlines Indulge in Greenwashing:

- Investigations and **studies in (Guardian investigation and Greenpeace report)** have revealed **flaws and deceptiveness in the carbon offset systems of major airlines**, casting doubt on the industry's carbon neutrality assertions.
 - Other airlines, including KLM (Netherlands-based airline) and Ryanair (Europe), Air Canada and Swiss Airlines have faced similar allegations of greenwashing and misleading customers with claims of being environmentally friendly.
- These findings raise concerns about the **credibility of the International Air Transport Association's net zero pledge by 2050**, which experts criticized as an act of greenwashing.

Note:

➤ **Airlines Significant Contributors to Carbon Pollution:**

- Flying is a significant contributor to carbon pollution, in 2021 aviation accounted for over **2% of global energy-related CO₂ emissions according to International Energy Agency (IEA)**.
- Aviation emissions could grow by **300-700% by 2050**, per estimates.
 - A single round trip from Mumbai to L.A. generates **4.8 tonnes of CO₂ (equivalent to charging 6,00,000 smartphones)**.

Blind Spots in Offset System:

- There is a **lack of universally recognized standards** and tracking mechanisms for counting carbon offsets, making it difficult to ensure additionality—the reduction of emissions that would not have occurred otherwise.
- Certification organizations play a role in connecting buyers and sellers of carbon credits, but the **oversight and verification processes have been criticized for allowing misleading projects** and phantom credits.

What are Carbon Credits?

- Carbon Credits (Carbon offsets) are received by the companies when they invest in offset projects such as environmental conservation, energy efficiency or renewable energy which **reduce, avoid, or remove greenhouse gas emissions from the atmosphere**.
- These credits represent the **amount of carbon dioxide that would have been removed from the atmosphere** through these initiatives.
- Each credit is equivalent to **one metric ton of CO₂**, which contributes to global warming.
- Companies use these credits to offset their carbon emissions in one area, like airplane travel, by claiming that they are reducing emissions somewhere else, such as in distant rainforests.
 - The voluntary carbon-offset market is expected to **grow significantly, from USD 2 billion in 2020 to approximately USD 250 billion by 2050**, according to a report by Morgan Stanley in 2023.

How does**Greenwashing Affect Carbon Credits?**

- **Informal Markets:**
 - There are credits available for all kinds of activities such as for growing trees, for planting a certain kind of crop, for installing **energy-efficient equipment in office buildings**.

- The credits for such activities are often certified by **unofficial third-party companies** and sold to others.
- Such transactions have been flagged for **lack of integrity and double counting**.

➤ **Credibility:**

- Countries like India or Brazil had accumulated **huge carbon credits under the Kyoto Protocol** and wanted these to be transitioned to the new market being set up under the **Paris Agreement**.
- But many developed countries resisted this, questioning the integrity of the credits and claiming they did not **accurately represent reductions in emissions**.

➤ **Lead to Lack of Transparency:**

- Greenwashing can lead to a **lack of transparency in the carbon offset market**.
- Companies may provide **limited information about the projects** they support, making it difficult to verify their **claims and assess** the actual environmental impact.
- This lack of transparency **undermines the credibility and trustworthiness** of the carbon credit system.

➤ **Diversion from Real Emission Reductions:**

- Greenwashing practices may **divert attention and resources away from genuine efforts** to reduce carbon emissions.
- Companies may rely on carbon credits as a way to offset their emissions without making significant changes to their operations or adopting more sustainable practices.
- This can **impede progress toward meaningful emission reductions** and the transition to a low-carbon economy.

Bonn Climate Meet

Why in News?

Recently, Delegates to the **Paris Agreement** met in Bonn, Germany, paving the way to some key decisions for the **UN Climate Conference (COP 28)** in Dubai in 2023.

- The Bonn session concluded with the agreement to share “informal notes” that will guide continued work leading up to **COP (Conference of Parties) 28** in Dubai.

What are the Key Highlights of the Meet?

- **Global Stocktake:**

Note:



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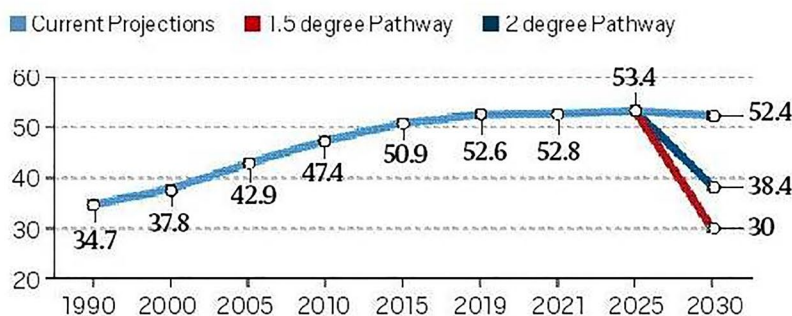
- Technical discussions were held on the Global Stocktake (GST), producing a short Framework on the **elements to be included in the stocktake exercise**.
- GST is a process mandated by the **2015 Paris Agreement**, which is an exercise to assess **progress in combating Climate Change** and determines

ways to strengthen global efforts to address the gap in adequacy.

- According to the Paris Agreement, the GST should take place every five years, starting in 2023. The actual meeting on GST would come in at COP28.

EMISSIONS STILL GROWING

Emissions in billion tonnes of CO₂ eq



Projected Emissions in 2030	52.4 billion tonnes CO ₂ eq
2030 Emissions for 2-degree pathway	38.4 billion tonnes Gap: 14 billion tonnes
2030 Emissions for 1.5-degree pathway	30 billion tonnes Gap: 22.4 billion tonnes

Projected rise in global temperatures with current level of climate action by 2030: 2.1 to 2.9 degree Celsius

➤ Advancing Post-2030 Ambition:

- Parties and civil society representatives used the meeting to focus on post-2030 ambition, particularly through **advancing the work on the Global Stocktake**.
- It seeks to strengthen efforts in adapting to climate change impacts and mobilizing **financial and technical resources** for developing nations.

➤ Funding Arrangements for Loss and Damage:

- Discussions focused on implementing **balanced funding arrangements to address Loss and Damage (L&D)** caused by climate change, particularly for vulnerable communities.
- While progress was made in operationalizing the **Santiago Network on loss and damage**, the issue of the network's host remained unresolved.
 - The Santiago Network aims to catalyze the **technical assistance of relevant organizations, bodies, networks and experts**, for the implementation of relevant approaches for **averting, minimizing and addressing L&D** at the local, national and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change.

➤ Climate Finance Alignment:

- The EU emphasizes the **need to align global financial flows** with the goals of the Paris Agreement.
- This includes examining the **pool of donors and ensuring that the scale of financial support matches** the requirements to address the climate crisis.

- The EU and many other countries emphasize the importance of addressing climate finance at COP28.

➤ Post-2025 Climate Finance Goal and Funding Arrangements:

- Constructive and substantive discussions took place in the technical expert dialogues regarding the new **post-2025 climate finance goal and funding arrangements**, including a fund for loss and damage.

➤ Urgency of Adaptation:

- Developed countries, including the EU, acknowledge the **urgency of addressing adaptation needs**. They commit to scaling up support by strengthening existing arrangements and institutions with proven experience and expertise in assisting vulnerable communities.

The Conference of the Parties (COP)?

- COP is the apex decision-making authority of **UNFCCC (United Nations Framework Convention on Climate Change)**.
- The COP meets every year, unless the **Parties decide otherwise**. The first COP meeting was held in Berlin, Germany in March 1995.
- The office of the COP President normally rotates among the five **United Nations regional groups which are** - Africa, Asia, Latin America and the Caribbean, Central and Eastern Europe and Western Europe and Others. The President is usually the environment minister of his or her home country. S/he is elected by acclamation immediately after the opening of a COP session.

Note:



UNFCCC

Conference of Parties (COP)

- Supreme decision-making body of UNFCCC
- Meets every year (unless the Parties decide otherwise)
- Meets in Bonn, the Secretariat (unless a Party offers to host the session)
- First COP – held in Berlin, Germany (1995)

COPs and Their Major Outcomes

COP 3 (1997)

Kyoto, Japan

- Adopted Kyoto Protocol (legally binding developed countries to reduce emission targets)

COP 7 (2001)

Marrakech, Morocco

- Marrakech Accords signed (set stage for ratification of Kyoto Protocol)

COP 8 (2002)

New Delhi, India

- Delhi Declaration (development needs of the poorest countries)
- Technology transfer for climate change (CC) mitigation)

COP 15 (2009)

Copenhagen, Denmark

- Developed countries pledged up to \$30 billion in fast-start finance (for 2010-12)

COP 14 (2008)

Poznan, Poland

- Adaptation Fund under Kyoto Protocol launched
- Poznan Strategic Programme on Technology Transfer

COP 13 (2007)

Bali, Indonesia

- Bali Road Map and Bali action plan (on shared vision, mitigation, adaptation, technology and financing)

COP 16 (2010)

Cancun, Mexico

- Cancun Agreements (assist developing nations in dealing with CC)
- Established: Green Climate Fund

COP 18 (2012)

Doha, Qatar

- Doha Amendment to Kyoto Protocol (reducing GHG emissions by 18% compared to 1990 levels)

COP 19 (2013)

Warsaw, Poland

- Warsaw Framework for REDD Plus
- Warsaw International Mechanism for Loss and Damage

COP 24 (2018)

Katowice, Poland

- Rulebook for Paris Agreement (actions to be taken as per NDCs)

COP 21 (2015)

Paris, France

- Paris Agreement (global temp. well below 2°C above pre-industrial times)
- Climate finance by rich countries
- yearly \$100bn funding pledge by rich countries)

COP 26 (2021)

Glasgow, UK

- India announced Net Zero Targets 2070
- India called for "phase-down" of coal-based power
- Glasgow Breakthrough Agenda (by 41 countries + India)

COP 27 (2022)

Sharm-el-Sheikh, Egypt

- Loss & Damage Fund
- USD 3.1bn plan for early warning systems
- G7-led 'Global Shield Financing Facility' for countries suffering climate disasters
- African Carbon Market Initiative
- Action for Water Adaptation and Resilience (AWARE) initiative
- Mangrove Alliance (in partnership with India)
- India's Long-Term Low Emission Development Strategy



Alligator Gar Fish

Why in News?

The discovery of an Alligator Gar fish (*Atractosteus spatula*), an invasive species in Kashmir's Dal Lake has raised concerns.

- The Lake Conservation and Management Authority (LCMA) and the Department of Fisheries are collaborating to understand the extent of the invasion and its potential impact.

What are Alligator Gar Fish and the Risks Associated?



About:

- The alligator gar is a close relative of the bowfin species. It is a ray-finned euryhaline fish (creature's ability to adapt to a wide range of water types that range in salinity) and is one of the biggest freshwater fish in North America and the largest species in the 'gar' family.
 - It is found in some parts of India such as Bhopal and Kerala.
- They grow rapidly and have a life span of 20-30 years.
- Protection Status:
 - IUCN: Least Concern.
- Concerns:
 - Gar fish can grow up to eight feet. They can be dangerous for indigenous fish species. During winter, they can even sustain themselves in the cold waters of Dal because the temperature they mostly live in is 11-23 degrees Celsius
- The Biological Diversity Act 2002:
 - The Biological Diversity Act 2002 prohibits the presence of invasive fish species that could harm natural fish populations.

Note:

Dal Lake

- It is a lake in **Srinagar, the capital of the Union Territory of Jammu and Kashmir (J&K)**.
- It is one of the **world's largest natural lakes and the second largest lake** in J&K.
- It is **integral to tourism and recreation in Kashmir and is named the "Jewel in the crown of Kashmir" or "Srinagar's Jewel"**.
- It is also an **important source for commercial operations in fishing and water plant harvesting**.
- It covers an **area of 18 square kilometres and is part of a natural wetland including its floating gardens**.
 - The **floating gardens**, known as "**Raad**" in Kashmiri, blossom with lotus flowers during July and August.

World Desertification Day 2023

Why in News?

World Day to Combat Desertification and Drought is observed every year on the 17th of June.

- The **theme for this year is "Her Land. Her Rights"** which focuses on women's land rights, essential for achieving the interconnected global goals of **gender equality** and **land degradation neutrality by 2030** and contributing to the advancement of several other **Sustainable Development Goals (SDGs)**.

What are the Highlights of World Day to Combat Desertification and Drought?



➤ Background:

- Desertification, along with climate change and the loss of biodiversity, were **identified as the greatest challenges to sustainable development during the 1992 Rio Earth Summit**.

- Two years later, in 1994, the UN General Assembly established the **United Nations Convention to Combat Desertification (UNCCD)**, the sole legally binding international agreement linking environment and development to sustainable land management and declared 17 June "**World Day to Combat Desertification and Drought**".
- Later on, in 2007, the **UN General Assembly declared 2010-2020 the United Nations Decade for Deserts and the fight against Desertification** to mobilise global action to fight land degradation, led again by the UNCCD Secretariat.

➤ Issues Addressed:

- Women's control over land is crucial. However, **they often lack rights and face barriers worldwide**. This limits their well-being and prosperity, especially when land degradation and water scarcity occur.
- Investing in **women's land access is an investment in their future** and the future of humanity.
- Desertification, land degradation and **drought** disproportionately impact women and girls, as they often **do not have access to and control of land resources**. They are most affected by **reduced agricultural yields and increased water scarcity**.
- In most countries, **women have unequal and limited access and control to land**. In many regions, **they remain subject to discriminatory laws and practices** that impede their right to inherit, as well as their access to services and resources.

➤ Gender Equality: An Unfinished Business:

- According to UNCCD's landmark study "**The Differentiated Impacts of Desertification, Land Degradation and Drought on Women and Men**," gender equality remains unfinished business in every part of the world.
 - Today, nearly half of the global agricultural workforce is female – yet **less than one in five landholders worldwide are women**.
- **Women's rights to inherit their husband's property continue to be denied** in over 100 countries under customary, religious, or traditional laws and practices.
- Globally, **women already spend a collective 200 million hours every day collecting water**. In some countries, a single trip to fetch water can take over an hour.

Note:

➤ **Initiative Taken & Recommendations:**○ **A Global Campaign:**

- Together with partners, high-profile personalities and influencers, UNCCD has launched a global campaign to recognize excellence, leadership, and efforts in sustainable land management by women and girls.

○ **Recommendations:**

- Governments can promote laws, policies and practices that end discrimination and secure women's rights to land and resources.
- Businesses can prioritise women and girls in their investments and facilitate access to finance and technology.
- Individuals can support women-led initiatives that are restoring land.

What is UNCCD's Gender Action Plan, 2017?

- The gender action plan, 2017 **was adopted during the Conference of the Parties (COP23)**, in Bonn, Germany to incorporate gender equality and women's empowerment in climate change discourse and actions.
- The aim is to ensure that women can influence climate change decisions and that women and men are represented equally in all aspects of the **UN Framework Convention on Climate Change (UNFCCC)**, as a way to increase its effectiveness.

What are Desertification and Drought?➤ **Desertification:**○ **About:**

- Degradation of land in arid, semi-arid and dry sub-humid areas. It is caused primarily by human activities and climatic variations.

○ **Causes:**

- **Climate change**
- Deforestation
- Overgrazing
- Unsustainable Agricultural Practices
- Urbanisation

➤ **Drought:**○ **About:**

- Drought is generally considered as a deficiency in rainfall /precipitation over an extended period, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people.

○ **Causes:**

- Variability in rainfall
- Deviation in the route of monsoon winds
- Early withdrawal of the monsoon
- **Forest fires**
- **Land degradation** in addition to Climate change

What are the Related Initiatives to Reduce Desertification?➤ **Indian Initiatives:**○ **Integrated Watershed Management Programme, since 2009-10:**

- It was launched by the Department of Land Resources, Ministry of Rural Development that aims to restore ecological balance by harnessing, conserving and developing degraded natural resources with the creation of Rural Employment.

○ **Desert Development Programme:**

- Launched in 1995 by the Ministry of Rural Development to minimise the adverse effect of drought and to rejuvenate the natural resource base of the identified desert areas.

○ **National Mission on Green India:**

- It was approved in 2014 and implemented under the Ministry of Environment, Forest and Climate Change with the objective of protecting, restoring and enhancing India's diminishing forest cover with a deadline of 10 years.

➤ **Global Initiatives:**○ **Bonn Challenge:**

- The **Bonn Challenge** is a global effort to bring 150 million hectares of the world's **deforested and degraded land into restoration by 2020, and 350 million hectares by 2030.**
- At the **UNFCCC Conference of the Parties (COP) 2015** in Paris, India also joined the voluntary Bonn Challenge pledge to bring into restoration 21 million hectares of degraded and deforested land by the year 2030.
 - The target has now been revised to restore 26 million hectares of degraded and deforested land by 2030.

Note:



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Security

Highlights

- India Approves Acquisition of MQ-9B Armed Drones from the US

India Approves Acquisition of MQ-9B Armed Drones from the US

Why in News?

Recently, India's Ministry of Defence granted approval for the **procurement of 31 MQ-9B armed drones** from the **United States**. The deal, worth a little over \$3 billion, is expected to be announced during Prime Minister Narendra Modi's state visit to Washington.

- The acquisition of these advanced drones aims to **enhance India's surveillance capabilities and strengthen its armed forces**.

What are MQ-9B Armed Drones?

➤ About:

- The MQ-9B drone is a variant of the **MQ-9 "Reaper"** which was used to launch a modified version of the Hellfire missile that eliminated **al-Qaeda leader Ayman al-Zawahiri in Kabul**.
- The **MQ-9B** has two variants **SkyGuardian** and its sibling **SeaGuardian**. The Indian Navy has been operating the MQ-9B Sea Guardian since 2020.
- The drone can operate at **over 40,000 feet**, giving the Indian military surveillance capacity in the high-altitude Himalayan border areas.
- The Predator also has the **maximum endurance of 40 hours**, making it useful for long-hour surveillance.
- MQ-9B drones are equipped with advanced features such as automatic take-off and landing, detect and avoid system, anti-spoofing GPS, and encrypted communication links.

➤ Need For India:

- India needs MQ-9B armed drones to enhance its surveillance and strike capabilities across its **land and maritime borders**, especially in the context of the **ongoing standoff with China in Ladakh** and the **rising tensions with Pakistan**.
- India also needs MQ-9B armed drones to counter the growing presence of **Chinese submarines and warships in the Indian Ocean Region**, and to protect its **vital sea lanes of communication and trade**.

MQ-9B

Predator Drones



Max Gross Takeoff Weight: **5,670 kg**

Fuel Capacity: **2,721 kg**

Payload Capacity: **2,177 kg across 9 hardpoints (8 wing, 1 centerline)**



Crew:

Two pilots in ground control stations

Weapons

Laser guided missiles

Anti-tank missiles

Anti-ship missiles

Missions

- Humanitarian Assistance/Disaster Relief
- Search and Rescue
- Law Enforcement
- Border Enforcement
- Defensive Counter Air
- Airborne Early Warning

Missions

- Electronic Warfare
- Anti-Surface Warfare
- Anti-Submarine Warfare
- Airborne Mine Counter Measures
- Long-Range Strategic ISR
- Over-the-Horizon Targeting

- India also needs MQ-9B armed drones to **support its counter-terrorism and counter-insurgency operations in Kashmir** and other regions.
- **Benefits of Acquiring MQ-9B Armed Drones to India:**
 - Acquiring MQ-9B armed drones will provide India with a **strategic edge over its adversaries**, as it will be able to conduct long-range surveillance and precision strikes without risking its manned aircraft or pilots.
 - Acquiring MQ-9B armed drones will also **boost India's defence cooperation with the US**, which has emerged as a key **partner for India in the Indo-Pacific region**.
 - The deal will also strengthen **India's role in the Quad grouping of democracies along with the US, Japan and Australia**.
 - Acquiring MQ-9B armed drones will also create opportunities for India's defence industry, as it will involve technology transfer and joint production under the Make in India initiative.

Note:

Art and Culture

Highlights

- Kharchi Puja
- Pilgrim Safety Challenges in Char Dham Yatra
- Jagannath Rath Yatra

Kharchi Puja

Why in News?

Kharchi Puja, a significant festival celebrated in the state of **Tripura**, has recently garnered attention in the news.

- The festival commenced on **June 26 this year** and will continue until July 2.

What is the Kharchi Puja?

- **About:**
 - Also known as the 'Festival of 14 Gods,' this traditional event involves the worship of **Chaturdasa Devata**, (housed in the ancient Ujjayanta Palace), the ancestral deity of the Tripuri people.
 - During the festival, the Tripuri people also worship the earth along with their 14 deities.
 - An important ritual in this festival involves the **construction of the Chaturdasha Mandapa**, a structure that symbolizes the royal palace of the Tripuri kings.
 - On the day of the Puja, the 14 gods are carried to river "**Saidra**" by the members of "**Chantai**" (royal priests). The gods are **bathed in the holy water** and are brought back to the temple.
- **History:**
 - The word '**Kharchi**' is derived from two Tripuri words— '**khar**' or kharta meaning sin and '**chi**' or si meaning cleaning.
 - Although the festival has **tribal origins**, it is celebrated by both tribal and non-tribal people of Tripura.
 - It is **believed that the Mother Goddess or Tripura Sundari**, the presiding deity of the land who protects the people of Tripura, **menstruates during the time of Ambubachi**, which is observed in **June**.

- There is a **popular belief that the Earth becomes impure during the menstruation period of the Goddess**.
- Hence, Kharchi Puja is observed to **ritualistically clean the Earth after her menstruation is over** and wash away the sins of the people in the land.



States and UTs	Major Festivals
Andhra Pradesh	Makar Sankranti, Ugadi
Arunachal Pradesh	Losar, Solang, Mopin, Monpa festival
Assam	Bihu
Bihar	Chhath Puja
Chhattisgarh	Maghi Purnima, Bastar Dussehra
Goa	Shigmo Mel
Gujarat	Navaratra, Uttarayan (International Kite Festival)
Haryana	Baisakhi, Gugga Naumi
Himachal Pradesh	Gochi, Kullu Dussehra
Jammu & Kashmir	Bahu Mela
Jharkhand	Sarhul, Karam/ Karma
Karnataka	Karaga
Kerala	Onam, Adoor Gajamela
Madhya Pradesh	Lokrang Festival
Maharashtra	Ganesh Chaturthi
Manipur	Yaosang, Cheiraoba, Heikru Hitongba
Meghalaya	Nongkrem Festival

Note:

Mizoram	Chapchar Kut,
Nagaland	Hornbill festival, Moatsu, Mimkut
Odisha	Rath Yatra
Punjab	Lohri, Baisakhi
Rajasthan	Gangaur, Teej
Sikkim	Sakewa, Tendong Lho Rum Faat
Tamil Nadu	Pongal
Telangana	Bathukamma
Tripura	Kharchi Puja, Neermahal Festival
Uttar Pradesh	Ram Navmi, Kumbh Mela
Uttarakhand	Magh Mela
West Bengal	Durga Puja

Pilgrim Safety Challenges in Char Dham Yatra

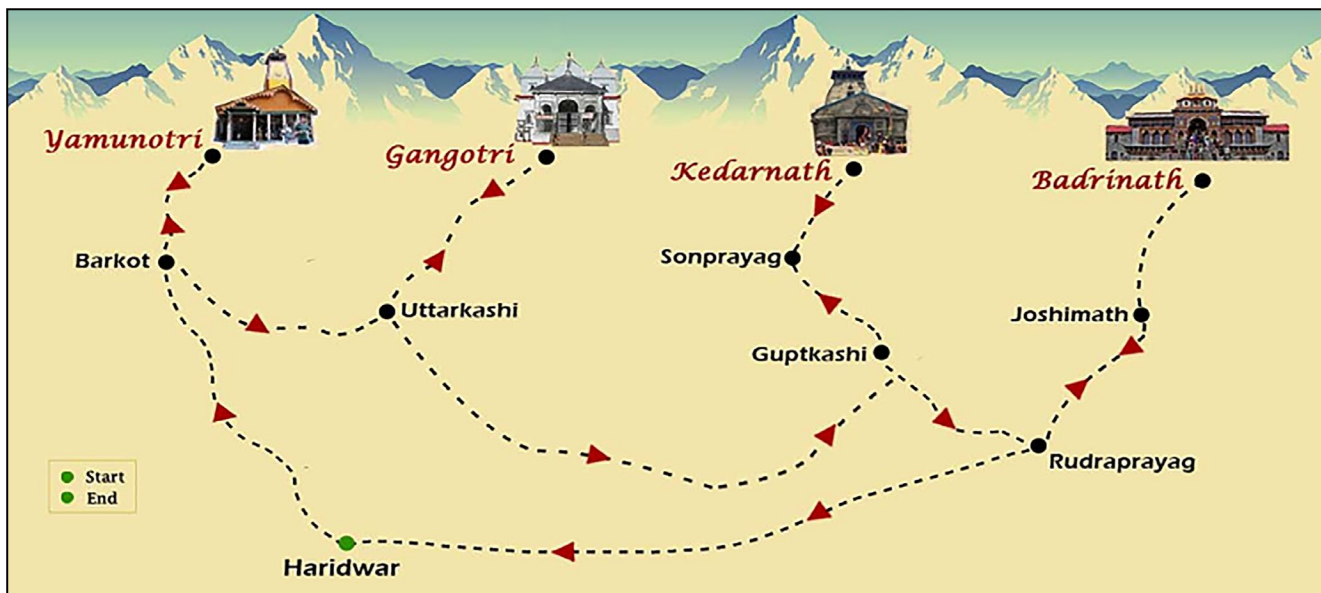
Why in News?

The Char Dham yatra, a pilgrimage to four sacred Hindu shrines in the Himalayas, has witnessed a **high number of deaths** among the devotees this year.

- According to official data, 149 pilgrims have died since the commencement of the yatra in April 2023, **mostly due to cardiac arrest and other health ailments**. The yatra, which attracts millions of pilgrims every year, has also been marred by road accidents and landslides.

What is Char Dham Yatra?

- **About:**



- Char Dham Yatra is a **pilgrimage circuit in the Indian state of Uttarakhand**.
- It involves visiting four sacred Hindu shrines located in the Himalayas.
- The four shrines included in the yatra are **Badrinath, Kedarnath, Gangotri, and Yamunotri**.
- It is believed that one should complete the **Char Dham Yatra in a clockwise direction**: Yamunotri, Gangotri, Kedarnath, and Badrinath.

➤ Religious Significance:

- Each of these shrines holds significant religious and **mythological importance in Hinduism**.
- It is believed that undertaking the Char Dham Yatra can cleanse one's sins and lead to spiritual salvation.

➤ Pilgrimage Season:

- **Usually starts in April or May and continues until November**, depending on weather conditions.
- The yatra involves trekking through challenging terrains, including high altitudes and mountainous regions.

➤ Economic Importance:

- The yatra is not only a religious journey but also a **significant cultural and tourism event** for Uttarakhand, attracting visitors from across India and around the world.
- It holds **great economic importance for the local communities**, providing employment opportunities and boosting the tourism industry in the region.

Note:

➤ **Note:**○ **Yamunotri Dham:**

- Location: Uttarkashi district.
- Dedicated to: **Goddess Yamuna.**
- **River Yamuna** is the **second-most sacred river in India** after River Ganga.

○ **Gangotri Dham:**

- Location: Uttarkashi district.
- Dedicated to: **Goddess Ganga.**
- Considered the **most sacred of all Indian rivers.**

○ **Kedarnath Dham:**

- Location: Rudraprayag district.
- Dedicated to: **Lord Shiva.**
- Situated on the bank of the **Mandakini River.**
- One of the **12 Jyotirlingas** (divine representations of Lord Shiva) in India.

○ **Badrinath Dham:**

- Location: Chamoli district.
- Home to the sacred **Badrinarayan Temple.**
- Dedicated to: **Lord Vishnu.**
- One of the **holy shrines for Vaishnavites .**

What is the Char Dam Project?

- **Char Dam Project** is a major infrastructure initiative in the Indian state of Uttarakhand.
- It aims to **improve connectivity and pilgrimage tourism** to the four holy Hindu sites, known as Char Dham.
- Expected to **boost tourism, trade, transport, and employment opportunities** in Uttarakhand.
- Enhances safety and security for pilgrims and strengthens military operations in border areas.



- Facilitates **disaster management and relief operations** in emergencies.

What are the Disaster**Management Challenges of Char Dham Yatra?**➤ **Disaster Management Challenges:**○ **Harsh Weather Conditions:**

- **Extreme Temperatures:** Exposure to **cold temperatures** can lead to **hypothermia** and other health complications.
- **Snowfall:** Makes the pilgrimage route slippery and difficult to navigate.

○ **Vulnerable Terrain:**

- **Mountainous Region:** **Steep slopes and rugged terrain** pose challenges for infrastructure development and maintenance.
- **Remote Locations:** Limited access to **medical facilities**, emergency services, and **communication networks**.
- **Limited Evacuation Routes:** In the event of a disaster or medical emergency, **evacuating pilgrims from remote areas becomes challenging.**

○ **Health Hazards:**

- **High Altitudes:** Pilgrims experience **altitude sickness**, which can lead to **dizziness, nausea, and shortness of breath.**
- **Strenuous Treks:** Long and arduous walks, especially at higher altitudes, can cause **physical exhaustion and injuries.**
- **Lack of Acclimatization:** Insufficient time for pilgrims to adjust to the high altitudes and harsh weather conditions.

○ **Natural Disasters:**

- **Landslides:** **Unstable slopes and heavy rainfall** increase the risk of **landslides**, obstructing the pilgrimage route.
- **Flash floods:** Sudden and intense rainfall can result in **flash floods**, posing dangers to **pilgrims near rivers and streams.**
 - In June 2013 **flash floods** of **Kedarnath** killed thousands of pilgrims and left many stranded.
- **Earthquakes:** Uttarakhand falls under a **seismic zone**, making it susceptible to earthquakes, which can trigger landslides and infrastructure damage.

Note:

➤ **Precautionary Measures and Mitigation Strategies:**

- **Weather Monitoring and Early Warning Systems:**
 - Install weather monitoring stations along the pilgrimage route to **track weather changes and implement an early warning system** for severe weather events.
- **Infrastructure Development and Maintenance:**
 - Improve **road infrastructure**, including widening and strengthening roads, constructing **protective barriers in landslide-prone areas**, and encouraging public-private partnerships for easy and safe travel.
- **Preventing Soil Erosion and Landslides:**
 - Implement **slope stabilization techniques** and **afforestation** programs to prevent soil erosion and landslides.
- **Emergency Services and Medical Facilities:**
 - Establish medical facilities and **emergency response centers** along the route, improve **communication networks**, and provide training for medical staff and emergency responders.
- **Pilgrim Safety and Awareness:**
 - Conduct **pre-yatra orientation programs**, provide detailed route information, and **encourage medical check-ups** for pilgrims.
- **Disaster Response and Evacuation Plans:**
 - Develop comprehensive **disaster response plans**, designate safe assembly points and temporary shelters, and conduct regular mock drills to ensure preparedness.

Jagannath Rath Yatra

Why in News?

The **Jagannath Rath Yatra** officially begins in **Puri, Odisha**. This year, the festival **commenced on June 20, 2023** and will culminate on **June 28, 2023**.

What is Jagannath Rath Yatra?

- **Jagannath Rath Yatra** is an **annual Hindu festival** that **celebrates** the journey of Lord Jagannath, his elder brother Lord Balabhadra, and his younger sister Goddess Subhadra from **their home temple in Puri, Odisha** to their **aunt's temple in Gundicha**, about **three kilometres away**.

- The legend behind the festival is that once, Goddess Subhadra expressed her desire to visit her aunt's place in Gundicha.
- To fulfil her wish, **Lord Jagannath and Lord Balabhadra decided to accompany her on a chariot ride**. This event is commemorated every year by taking the deities on a similar journey.
- The festival dates **back to at least the 12th century CE**, when the Jagannath temple was built by **King Anantavarman Chodaganga Deva**. However, some sources suggest that the festival was already in practice since ancient times.
- The festival is also known as **Festival of Chariots**, as the deities are carried on **three massive wooden chariots that are pulled by devotees with ropes**.
 - It begins on the **second day of the bright fortnight of the month of Ashadha (June-July)** and lasts for **nine days**.
- **Features of the Chariots:**
 - The **rupakar servitors** are skilled craftsmen responsible for carving intricate figures of birds, animals, flowers, and guardian deities on the chariots.

THE THREE RATHS

	NANDIGHOSA	DARPADALAN	TALADHWAJA
Presiding Deity	Lord Jagannath	Goddess Subhadra	Lord Balabhadra
Wheels	16	12	14
Wooden pieces used	832	593	763
Height	44.2 feet	42.3 feet	43.3 feet
Colour of cloth	Red & yellow	Red & black	Red & green



Jagannath Puri Temple

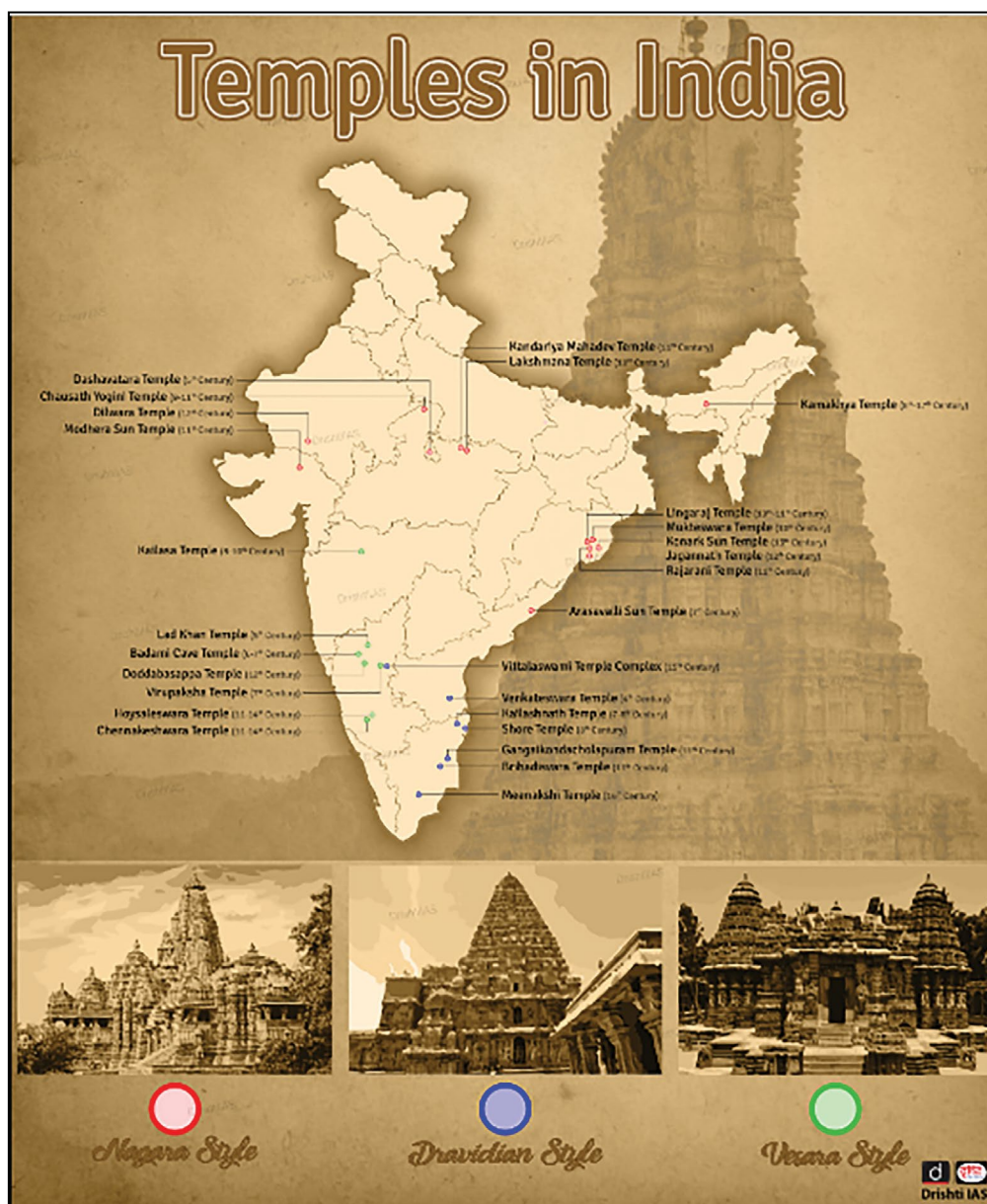
- **Jagannath Puri Temple** is one of the most impressive monuments of the **Indian State Odisha**.
 - This temple is known as the **"White Pagoda"** and is a part of **Char Dham pilgrimages (Badrinath, Dwaraka, Puri, Rameswaram)**.

Note:



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- It is a **splendid example of Kalinga architecture**, which is characterised by **curvilinear towers, intricate carvings and ornate sculptures**.
 - The temple complex is surrounded by a high wall with four gates facing the four cardinal directions.
 - The main temple consists of four structures: the **vimana (sanctum)**, the **jagamohana (assembly hall)**, the **nata-mandira (festival hall)** and the **bhoga-mandapa (offering hall)**.
- Jagannath Puri temple is called '**Yamanika Tirtha**' where, according to the Hindu beliefs, the **power of 'Yama', the god of death has been nullified in Puri** due to the presence of Lord Jagannath.



Note:

History

Highlights

- Rani Durgavati
- Discovery of Ancient Maya City
- Mesolithic Rock Paintings Unearthed in Andhra Pradesh

Rani Durgavati

Why in News?

Recently, the Madhya Pradesh government launched a six-day rally called the **Rani Durgavati Gaurav Yatra** to commemorate the life and **legacy of the 16th-century queen, Rani Durgavati**, who fought against the Mughals.

Who was Rani Durgavati?

➤ About:

- Rani Durgavati, born in 1524 in **Mahoba's Chandela dynasty** (present-day Uttar Pradesh, near the border with Madhya Pradesh), was a symbol of **India's self-determination**.
 - Chandelas were known for building the famous **Khajuraho temples** in the 11th century.
- She married Dalpat Shah, the son of Gond King Sangram Shah, and ruled the kingdom of **Garha-Katanga** after the death of her husband in 1550 with great vigor and courage.
- The Kingdom of Garha-Katanga included the regions of **Narmada Valley and parts of Northern Madhya Pradesh**.



- Gond tribe is a **prominent tribe in central India** known for their rich cultural heritage and resilience.
- As per the government's documentation, **the queen and her generals managed the affairs of the kingdom for 16 years**.

➤ The Mughal Attack on Garha-Katanga:

- Rani Durgavati, the brave queen of Garha-Katanga, opposed the **Mughal Empire's expansion** in the mid-16th century.
- Rani Durgavati displayed strong leadership while fighting against **Akbar's commander Asaf Khan** and the neighboring Malwa Sultan Baz Bahadur. She initially triumphed in the battle against Asaf Khan's attack on her kingdom.
- However, the Mughals regrouped and overwhelmed her forces. Rather than surrendering, Rani Durgavati chose to sacrifice her life.

➤ Legacy and Recognition:

- Revered as a patriotic ruler who symbolized **India's self-determination**.
- Described as a combination of **beauty, grace, courage, and bravery** by Abul Fazl, the court historian of Akbar.
- Remembered for her sacrifices and as a defender of her culture.

Discovery of Ancient Maya City

Why in News?

Archaeologists in Mexico have made a significant discovery in the dense jungle of the **Yucatan Peninsula**, uncovering the remains of an **ancient Maya city**.

Note:



What are the Major Findings Related to Ancient Maya City?

➤ About:

- The **National Institute for Anthropology and History (INAH) in Mexico** led the expedition to Ocomtún.
 - The research team used **airborne laser scanning** to identify **pre-Hispanic structures throughout the region**.
- Named Ocomtún, meaning “stone column” in the **Yucatec Maya language**, this newly discovered city is **believed to have been a prominent centre in the central lowland region of the Yucatan Peninsula between 250 and 1000 AD**.
- It also provides invaluable insights into the **advanced societal and religious practices of the Maya civilization**, known for its **sophisticated mathematical calendars**.

➤ Major Findings:

- **Elevated Terrain:** One of the most surprising findings was an **elevated terrain surrounded by wetlands**, suggesting a unique and strategic settlement pattern.
- **Pottery:** **Pottery fragments** found at the site indicate that Ocomtún was **inhabited during the Late Classic period (600-900 A.D.)**
- **Central Altars:** It was discovered near the **La Riguena river**, possibly used for community rituals.
 - Central altars suggest the **presence of community rituals, highlighting the spiritual and communal aspects of Maya life**.
- **Pre-Hispanic Ball Games:** It was played throughout the Maya region, representing a religious practice.

- The game involved **passing a rubber ball**, symbolising the sun, through a stone hoop without using hands.
- **Decline of the City:** The site likely underwent significant changes between **800 and 1000 AD**.
 - This period coincided with the **decline and collapse of the Lowland Maya civilization**, which was marked by a **decline in population, urban centres, and political instability**.
 - The fall of Ocomtún and other Maya cities was part of a **larger regional collapse, signifying a transformative period in Maya history**.

What is Maya Civilization?

- The Maya are an indigenous people of Mexico and Central America. Originating in the Yucatán, they rose to prominence around A.D. 250 in **present-day southern Mexico, Guatemala, northern Belize and western Honduras**.
- The **rise of the Maya began about 250 CE**, and what is known to archaeologists as the **Classic Period of Mayan culture lasted until about 900 CE**.
- The Maya civilization was one of the most advanced and influential cultures.
- They developed complex systems of **writing, astronomy, mathematics, art, architecture, and religion**.
- They also built impressive cities with **pyramids, palaces, temples, and plazas**. However, many aspects of their history and culture remain mysterious and unknown.

What are the Other Major Ancient Civilizations?

- **The Indus Valley Civilization**- Northeast Afghanistan to Pakistan and northwest India
- The Mesopotamian Civilization- Iraq, Syria, and Turkey
- The Incan Civilization- Ecuador, Peru, and Chile
- The Aztec Civilization- Mexico
- The Persian Civilization- Iran
- The Ancient Greek Civilization- Greece
- The Ancient Egyptian Civilization- Egypt

What are the Key Facts of Mexico?

- Form of Government: Republic of federated states
- Capital: Mexico City
- Official Language: Spanish
- Money: Peso
- Major Mountain Ranges: Sierra Madre
- Major Rivers: Rio Grande, Yaqui

Note:



Mesolithic Rock Paintings Unearthed in Andhra Pradesh

Why in News?

Recently, a former archaeologist of **Archaeological Survey of India (ASI)** has discovered a **Mesolithic period** rock painting depicting a person tilling a piece of land in Guntur district, Andhra Pradesh.

- It was found while surveying the **lower River Krishna Valley** to ascertain the architectural features of shrines.
- Earlier, in 2018, archaeologists had uncovered prehistoric rock art estimated to be from the **Neolithic era, circa 1500-2000 BC**, on natural limestone formations near Dachepalli in Guntur district.



What are the Key Findings?

- **Natural Rock Shelters:**
 - The rock paintings were found **on the walls and ceilings of naturally formed caves** on a hillock in Orvakallu.
 - These caves served as **shelters for the prehistoric humans** who inhabited the area during that time.
- **Mesolithic Rock Paintings:**
 - Among the five caves explored, two stood out with **distinguished depictions of rock paintings**.
 - Executed by people of the Mesolithic Age, these paintings offer a **glimpse into the artistic abilities and practices** of that era.
- **Artistic Materials:**
 - The rock paintings were created **using natural white kaolin and red ochre pigments**.
 - **Ochre is a pigment composed of clay, sand, and ferric oxide.**

Note:



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- **Kaolinite** is a **soft, earthy, and usually white mineral** produced by the chemical weathering of aluminium silicate minerals like feldspar.
- Over time, exposure to air and wind has **resulted in significant damage** to the paintings. However, some **sketches and outlines remain intact**.
- **Depicted Scenes:**
 - The rock paintings depict various scenes from the daily life of the **prehistoric communities**.
 - One painting portrays a man skillfully **catching a wild goat with his left hand while using a hook-like implement** to control it.
- Another painting captures two couples with raised hands, while a child stands behind them, **possibly indicating communal activities** or rituals.
- **Agricultural Practices:**
 - A significant painting showcases a **man holding a plough and appearing to till the land**. This depiction suggests a semi-settled life pattern where community members engaged in domesticating animals and cultivating crops, reflecting early agricultural practices.

Stone Ages

➤ **Palaeolithic (Old Stone) Age:**

- Basically, a hunting and food gathering culture.
- Palaeolithic tools include **sharpened stone, chopper, hand axe, scraper, spear**, bow and arrow, etc. and were generally made up of hard rock quartzite.
- Rock paintings and **carvings found at Bhimbetka, Madhya Pradesh** reflect upon hunting as the main subsistence activity.
- Palaeolithic age in India is divided **into three phases**:
- **Early or Lower Palaeolithic** (500,000 – 100,000 BC)
- **Middle Palaeolithic** (100,000 – 40,000 BC)
- **Upper Palaeolithic** (40,000 – 10,000 BC).

➤ **Mesolithic (Middle Stone) Age (10,000 BCE - 8000 BCE):**

- The age is marked by transition from **Pleistocene period to Holocene period** and favorable changes in the climate.
- The early period of Mesolithic age marks the **hunting, fishing and food gathering**.
- **Domestication** of the animals **began** in this age.
- The tools called **Microliths** were **smaller** and had **improved geometry** than the Palaeolithic age.

➤ **Neolithic (New Stone) Age (8000 BCE - 1000 BCE):**

- Referred to as the **concluding phase of the Stone Age**, the age heralded the beginning of food production.
- Sedentism (living in one place for a long time), use of pottery, and invention of crafts are characteristic features of the neolithic age.
- The neolithic tools were **composed of heavy ground tools like pestles, grinders, pounders** and also axes and sickles.
- **Megalithic Culture:**
- Megaliths refer to **large stone structures that were constructed** either as burial sites or as commemorative sites.
- In India, archaeologists trace the majority of the megaliths to the **Iron Age (1500 BC to 500 BC)**, though some sites precede the Iron Age, extending up to 2000 BC.
- Megaliths are spread across the Indian subcontinent. Majority of them are found in peninsular India, concentrated in the **states of Maharashtra** (mainly in Vidarbha), Karnataka, Tamil Nadu, Kerala, Andhra Pradesh and Telangana.



Note:



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Geography

Highlights

- Indian Ocean Dipole
- Impact of Ground Water Extraction on Earth's Spin

Indian Ocean Dipole

Why in News?

The Indian **Monsoon** is expected to be influenced by the **El Nino phenomenon in 2023**, there are also anticipations of a positive **Indian Ocean Dipole (IOD)** developing, which could potentially offset the **impact of El Nino**.

- According to the **India Meteorological Department (IMD)**, there is about 80% probability for positive IOD conditions and 15% of a neutral IOD during June-August 2023 season.
- While El Nino is already firmly established in the Pacific Ocean in 2023, the IOD is **still in the neutral phase** and may develop in the coming months.

What is the Indian Ocean Dipole (IOD)?

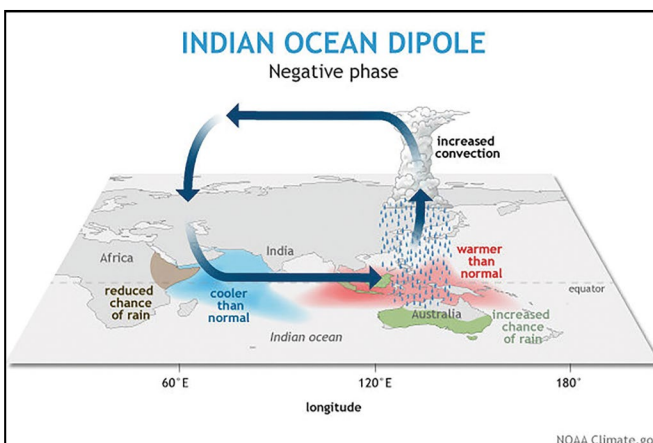
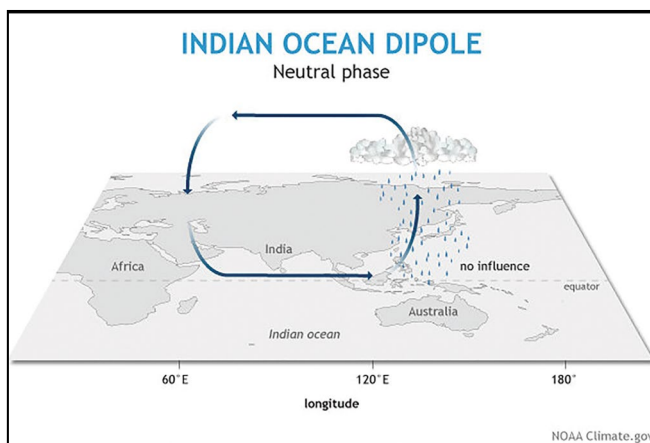
- **IOD or Indian Nino:**
 - IOD, sometimes referred to as the **Indian Nino**, is similar to the **El Nino** phenomenon, **occurring in the relatively smaller area** of the Indian Ocean between the **Indonesian and Malaysian coastline in the east and the African coastline near Somalia in the west**.

- The **El Nino** is the warmer-than-normal phase of the **El Nino Southern Oscillation (ENSO) phenomenon**, during which there are generally warmer temperatures and less rainfall than normal in many regions of the world, including India.

- One side of the ocean, along the equator, gets warmer than the other.
- IOD is said to be positive when the western side of the Indian Ocean, near the **Somalia coast, becomes warmer** than the eastern Indian Ocean.
- It is negative when the **western Indian Ocean is cooler**.

➤ Mechanism:

- **Negative IOD:**
 - The air circulation in the Indian Ocean basin moves from **west to east**, that is from the **African coast towards the Indonesian islands**, near the surface, and in the opposite direction at the upper levels. That means the **surface waters in the Indian Ocean get pushed from west to east**.
 - In a normal year, **warmer waters in the western Pacific** near Indonesia cross over into the Indian Ocean and make that part of the Indian Ocean slightly warmer. That



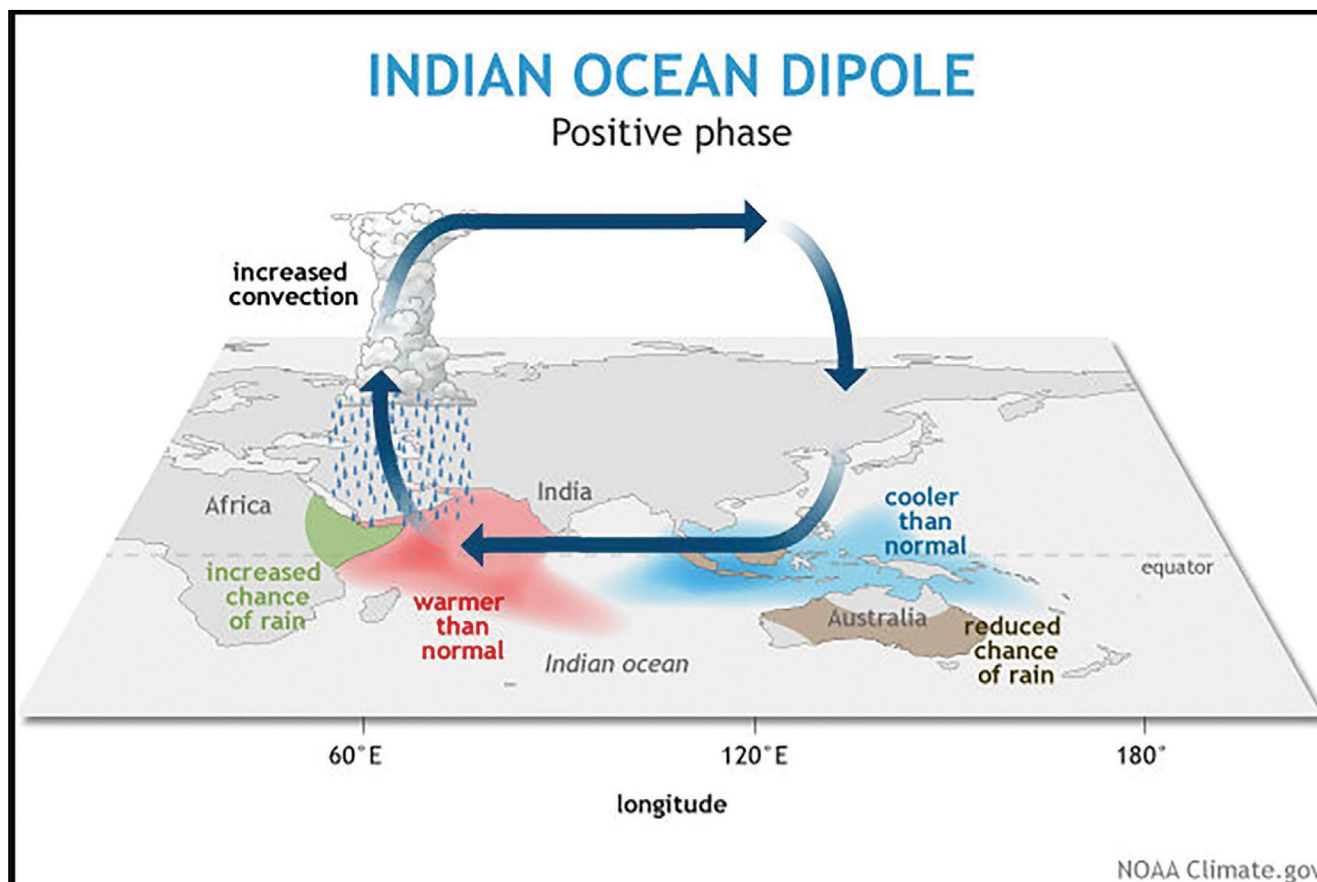
Note:

causes the air to rise and helps the prevailing air circulation.

- In the years when the air circulation **becomes stronger, more warm surface waters from the African coast** are pushed towards the Indonesian islands, making that region warmer than usual. This causes hotter air to rise, and the **cycle reinforces itself**.
- This is the **state of negative IOD**.
- **Positive IOD:**
 - Air circulation becomes **slightly weaker** than

normal. In some rare cases, the air circulation **even reverses direction**. The consequence is that the African coast **becomes warmer while the Indonesian coastline gets cooler**.

- A positive IOD event is often seen developing at times of an **El Nino**, while a **negative IOD is sometimes associated with La Nina**.
- During El Nino, the Pacific side of Indonesia is cooler than normal because of which the Indian Ocean side also gets cooler. That **helps the development of a positive IOD**.



➤ **Impact of IOD:**

- In the Indian Ocean, IOD exhibits an **ocean-atmosphere interaction** that closely resembles the fluctuations observed during El Niño events in the **Pacific Ocean**. However, the IOD is considerably **less powerful compared to El Niño, resulting in relatively minimal impacts**.
- A positive IOD helps rainfall **along the African coastline and also over the Indian sub-continent** while suppressing rainfall over Indonesia, southeast

Asia and Australia. The impacts are opposite during a negative IOD event.

➤ **Past Events:**

- In 2019 the IOD event developed during the late monsoon but was **so strong that it compensated for the deficit rainfall** during the first month of the monsoon season (June had 30% deficiency that year).
 - The deficit in June that year was also **attributed to a developing El Nino but that fizzled out later**.

Note:

What is ENSO?

- In a normal year, the eastern side of the Pacific Ocean, near the **northwestern coast of South America**, is cooler than the western side near the islands of Philippines and Indonesia.
 - This happens because the **prevailing wind systems that move from east to west sweep the warmer surface waters** towards the Indonesian coast.
- The relatively **cooler waters from below come up** to replace the displaced water.
- An El Nino event is the **result of a weakening of wind systems that leads to lesser displacement** of warmer waters.
- This results in the **eastern side of the Pacific becoming warmer** than usual. During **La Nina**, the **opposite happens**.
- Both these conditions, together called **El Nino Southern Oscillation (ENSO)**, affect weather **events across the world**.
- Over India, the El Nino has the **impact of suppressing monsoon rainfall**.

El Niño and La Niña

El Niño

- Warming of the ocean surface/ Above average sea surface temp. (SST)
- Easterly winds either weaken or start blowing in the opposite direction
- First noticed by Peruvian fishermen in the 1600s
- More frequent than La Niña

Impacts

- Drastically higher rainfall in S. America (coastal flooding and erosion)
- Droughts in Indonesia and Australia; wildfires
- Weaker monsoons and even droughts in India and SE Asia
- Reduces the upwelling of cooler, nutrient-rich waters from the deep - along the west coast of South and Central America.

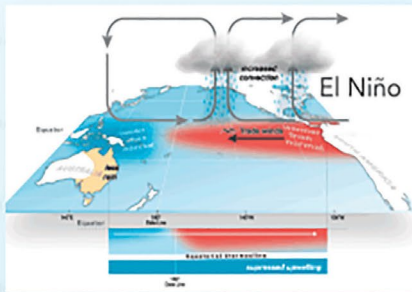


Fig. 1 - Depiction of El Niño Phenomenon

La Niña

- Also called El Viejo, anti-El Niño, or simply "a cold event"
- Normal easterly winds along the equator become even stronger
- May last 1-3 years, unlike El Niño (which usually lasts no more than a year)

Impacts

- Heavier rains in SE Africa, catastrophic floods in Australia
- Drier-than-normal conditions in S. America
- Summer Monsoon rainfall - greater than normal rainfall in India; beneficial for agriculture dependent Indian economy
- Off the west coast of the Americas, upwelling increases, bringing cold, nutrient-rich water to the surface.

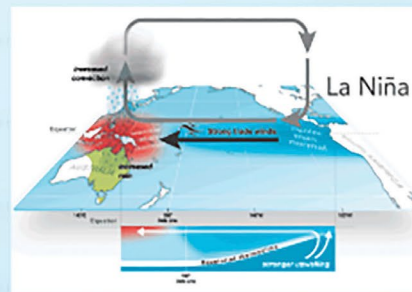


Fig. 2 - Depiction of La Niña Phenomenon

Oceanic Nino Index (ONI)

- It is a measure of the departure from normal sea surface temperature in the east-central Pacific Ocean.
- It is the standard means by which each El Niño episode is determined, gauged, and forecast.

Note:

Impact of Ground Water Extraction on Earth's Spin

Why in News?

A recent study published in **Geophysical Research Letters** has shed light on the significant impact of **Groundwater Extraction** on Earth's Rotational Axis and its contribution to global sea-level rise.

- Researchers analyzed changes in the drift of Earth's rotational pole and water movement — first, by accounting for **just ice sheets and Glaciers** and then by adding different groundwater redistribution scenarios.

What are the Factors Affecting Earth's Rotation?

- Factors contributing to polar motion include **Weather, Seasonal Changes, the molten Core, and powerful Hurricanes**.
 - Polar motion is the **movement of the Earth's rotational axis** relative to its crust, reflecting the influence of the material exchange and mass redistribution of each layer of the Earth on the Earth's rotation axis.
 - Generally, polar motion is caused by changes in the **hydrosphere, atmosphere, oceans, or solid Earth**.
- Earth's Geographic North and South Poles are where its **axis intersects the surface**; however, they are not fixed. The axis and hence the poles **fluctuate due to variations in the Earth's mass distribution**.
- In the past, the poles' drift was only caused by natural forces like ocean currents and the convection of heated rock deep beneath the Earth.
- But the new research **pitched the redistribution of groundwater as the primary culprit** for the drift.
 - Water's role in altering the Earth's rotation was discovered in 2016, and until now, the contribution of **groundwater to drifts has been unexplored**.

What are the Key Findings of the Study?

- **Earth's Tilt:**
 - Groundwater pumping has tilted Earth nearly **80 centimeters east between 1993 and 2010** alone.
 - The water circulated across the planet **determines how mass is distributed**.

- Between **1993 and 2010**, people pumped **2,150 gigatons of groundwater**, or more than 6 millimeters of sea level increase.

➤ Impact on Polar Drift:

- Excessive groundwater pumping has caused the **Earth's pole to drift at a rate of 4.36 centimeters per year between 1993 and 2010**, making it the climate-related factor with the greatest impact on polar motion.
- Redistributing water from the **mid-latitudes significantly influences polar drift**; therefore, the location of redistribution determines polar drift.
 - During the study period, most redistribution occurred in western North America and northwestern India — both located at mid-latitudes.

➤ Impact of Groundwater Pumping on Sea-Level Rise:

- Groundwater pumping contributed to a **sea-level rise of 6.24 mm** during the mentioned period.
- Pumping from mid latitude areas, such as northwest India and western North America, has the **most substantial influence on Earth's axis drift**.

➤ Impact of Polar Drift:

- The rotational pole normally **changes by several metres within about a year**, so changes due to groundwater pumping **don't run the risk of shifting seasons**.
- But on geologic time scales, **polar drift can have an impact on climate**.

➤ Recommendations:

- Attempts to slow groundwater depletion rates, especially in those sensitive regions, **can theoretically alter the change in drift**, but only if such conservation approaches are sustained for decades.

What is the Significance of the Study?

- The findings emphasize the **need to address groundwater depletion** and its consequences on a global scale.
- This finding underscores the importance of considering groundwater depletion as a crucial factor in analyzing Earth's rotational dynamics and rising sea levels.



Note:

Ethics

Highlights

- Emotional Intelligence
- Custodial Torture and Ethical Concerns
- Organic Intellectuals and Capitalist Hegemony
- Ethical Concerns of Organ Donation and Transplantation

Emotional Intelligence

EMOTIONAL INTELLIGENCE

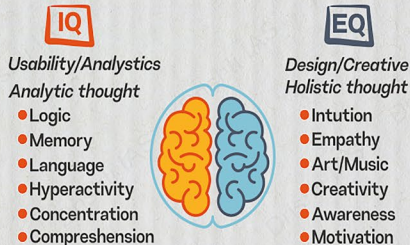
El is the ability to understand and manage emotions - own as well as others'

History

- First used by Wayne Payne (1986)
- In 1990, Daniel Goleman published his book on EI that's when the concept of EI started to be applied worldwide

EQ v/s IQ:

- IQ represents cognitive abilities, EQ represents emotional



Bar-On Model of EI

- Describes EI as an array of interrelated emotional and social competencies, skills and behaviors that impact intelligent behavior

EI Skills (given by Daniel Goleman)

- David Goleman developed a framework of 5 key components that make up EI



Importance

- **Personal Life:**
 - Better social relations
 - Better mental health & stress management
 - Effective leadership
 - Enhance decision making
- **Professional Life:**
 - Helps resolve conflicts
 - Helps coach and motivate others
 - Develops collaborative culture
 - Builds psychological safety within teams
- **In Civil Services:**
 - Better understanding of nature of problems
 - Better targeted policies
 - Motivating subordinates
 - More innovative solutions

Signs of being Emotionally Intelligent

- Able to identify and describe what people are feeling
- Aware of personal strengths and limitations
- Self-confidence and self-acceptance
- Able to accept own mistakes and let go of others'
- Receptivity
- Feel concerned for others & sensitive to their feelings

Developing EI Skills

- Develop habit of writing journals
- Regularly examine your own emotions
- Seek feedback of others
- Listen and pay attention to others
- Cultivate empathy
- Learn conflict resolution techniques

Note:

Custodial Torture and Ethical Concerns

CUSTODIAL DEATH



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CD is a death that occurs while a person is in the custody of law enforcement officials or in a correctional facility

CAUSES

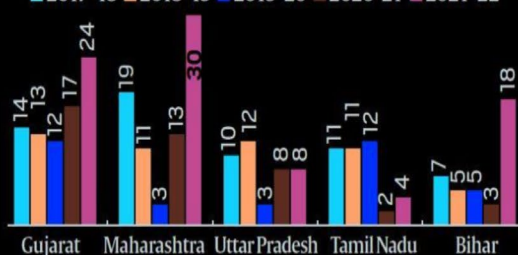
- Use of excessive force, (medical) neglect, abuse by authorities etc.

HIGHEST CDs IN INDIA (2017-18 to 2021-22)

- **Uts:** Delhi (29), J&K (4)
- **States:** Gujarat (80), Maharashtra (76), UP (41), TN (40) and Bihar (38)

STATES WITH HIGHEST CUSTODIAL DEATHS

■ 2017-18 ■ 2018-19 ■ 2019-20 ■ 2020-21 ■ 2021-22



LEGAL PROVISIONS

- **CrPC Section 41** - Amended in 2009; arrests and detentions for interrogation to have reasonable grounds and documented procedures
- **IPC Sec 302, 304, 304A, and 306** - Include crime of custodial torture
 - **Sec 330, 331** - Punishment for injury inflicted for extorting confession

Complaints of such human rights violations are received by the NHRC under Protection of Human Rights Act, 1993

MAJOR ISSUES REGARDING CDs

- No anti-torture legislation
- Opaque, poor prison system
- Excessive force used against marginalised/ protesters
- Lengthy, expensive judicial processes

India signed the UN Convention against Torture (1985) in 1997 but hasn't ratified it yet

CD V/S FUNDAMENTAL RIGHTS

- Protection from torture (**Article 21**)
- Protection against arrest and detention in certain cases, Right to Counsel (**Article 22**)

SOLUTIONS

- Multi-pronged strategy encompassing **legal enactments, technology, accountability, training and community relations**
- Taking **stringent action against personnel** breaching the commandments issued by the SC in *D.K. Basu v. State of West Bengal (1997)* (such as - All **police personnel to wear name tags** clearly indicating their name, designation)

Note:

Why in News?

Recently, the **Delhi High Court** has upheld the conviction and **10-year sentence** (awarded in 2019) of **five Uttar Pradesh policemen for Custodial Torture** of a 26-year-old man causing his death in 2006.

What is Custodial Torture?

➤ About:

- Custodial torture is the **infliction of physical or mental pain or suffering** on a person who is in the custody of the police or other authorities.
- It is a grave violation of **human rights** and dignity and often leads to **custodial deaths**, which are deaths that occur while a person is in custody.

➤ Types of Custodial Death:

- **Death in Police Custody:** Can result from excessive force, torture, denial of medical care, or other forms of abuse.
- **Death in Judicial Custody:** May occur due to overcrowding, poor hygiene, lack of medical facilities, inmate violence, or suicide.
- **Death in the Custody of Army or Paramilitary Forces:** Can happen through torture, extrajudicial killings, encounters, or crossfire incidents.

Constitutional Provisions Related to Custodial Torture:

- **Article 21 of the Constitution of India** guarantees the **right to life and personal liberty**, which includes the **right to be free from torture** and other **cruel, inhuman or degrading treatment** or punishment.
- **Article 20(1)** states that no **person shall be convicted of any offence**, except those which are in contravention of the law in power at the commission of the Act.
 - **Article 20(3)** prohibits a person to be compelled to be a witness against himself. It is an extremely instrumental law as **it protects the accused from giving confessions** when the accused is **coerced or tortured to do so**.
- **Related International Conventions:**
 - **International Human Rights Law, 1948** contains a provision which **protects people from torture and other enforced disappearances**.
 - **The United Nation Charter, 1945** also (clearly) calls for **treating prisoners with dignity**.
 - **The Nelson Mandela Rules, 2015** were **adopted by the UNGA** to **treat prisoners with inherent dignity** and to prohibit torture and other ill-treatment.

What are the Ethical

Arguments against Custodial Torture?

➤ Violates Human Rights and Dignity:

- Every individual possesses **inherent dignity and should be treated with respect** and fairness. Custodial violence **violates this fundamental principle by subjecting individuals to physical and psychological harm**, stripping them of their dignity, and denying them the basic **Human Rights**.

➤ Undermines Rule of Law:

- Custodial violence **undermines the principles of the rule of law** and due process.
- Law enforcement officers **have a duty to uphold and enforce the law**, but engaging in violence **contradicts the very principles they are meant to uphold** - justice, equality, and **protection of human rights**.

➤ Presumption of Guilty:

- Custodial torture **undermines the principle of "innocent until proven guilty"**. Torturing individuals before they have been convicted of a crime violates their **right to a fair trial** and due process.
- It is the responsibility of the justice system to determine guilt or innocence, not to inflict punishment through torture.

➤ Against Professionalism and Integrity:

- Police officers and authorities are **expected to adhere to high ethical standards**, including professionalism, integrity, and respect for human rights.
- Custodial violence violates these ethical principles and **tarnishes the reputation of the profession as a whole**.

➤ Targets Vulnerable Individuals:

- Custodial violence often targets individuals **who are already vulnerable**, such as suspects, detainees, or prisoners. This includes **marginalised populations, minorities**, or those lacking social power.
- Ethically, it is crucial to **protect and support the rights of these vulnerable individuals** rather than subjecting them to further harm.

➤ Betrays Legal and Moral Responsibility:

- Law enforcement officers and **authorities have a legal and moral responsibility to protect the welfare** and rights of those under their custody. Engaging in violence or abuse represents a **betrayal of this responsibility** and a **violation of the ethical obligations** inherent in their roles.

Note:



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Organic Intellectuals and Capitalist Hegemony

Why in News?

In a recent development that has caught the attention of social and economic observers, a growing wave of organic intellectuals is emerging as a formidable force in challenging capitalist hegemony.

- Italian Marxist Antonio Gramsci introduced the concept of the “organic intellectual” in his **Prison Notebooks**, highlighting their significance in understanding his philosophy of praxis.
- Gramsci emphasised the complex relationship between class power, ideology, organic intellectuals, **hegemony**, and the state in capitalist society.

What is Gramsci's Philosophy of Praxis?

- Gramsci's philosophy of praxis is a way of thinking about **Marxism** that focuses on the importance of culture, ideas, and people's choices in bringing about historical change.
 - Instead of seeing economic factors as the only driving force behind history, Gramsci believed that individuals are active participants in shaping their own destiny, rather than just passive victims of their circumstances.
- According to Gramsci, in modern capitalist societies, there are different social groups with varying interests and levels of awareness.
 - The dominant class holds power not only through economic means but also by influencing culture and morals.
- Gramsci's philosophy of praxis seeks to understand how the ruling class maintains its control over the lower classes through cultural and moral leadership.
 - It also aims to understand how the dominant class maintains its hegemony, or cultural and moral leadership, over the subordinate classes and how the latter can develop a counter-hegemony that challenges the existing order.

Who are the Organic Intellectuals?

- According to Gramsci, intellectuals are not a separate category of people who possess a special quality of mind or a superior level of education. Rather,

intellectuals are defined by their function and role in society.

- Gramsci distinguishes between two types of intellectuals: **traditional and organic**.
- **Traditional intellectuals** are those who claim to be independent and autonomous from any class or social group.
 - They present themselves as the bearers of universal values and knowledge, such as **priests, teachers, artists, scientists, etc.**
 - However, Gramsci argued that **traditional intellectuals are actually aligned with the dominant class** and serve its interests by legitimising its worldview and values.
- **Organic intellectuals** are those who emerge from within a specific class or social group and articulate its interests and aspirations.
 - They are organically linked to the masses and mediate between their common sense and the ruling ideology. They also help to organise and mobilise their class or group for political action.
 - Gramsci argued that **every class or social group produces its own organic intellectuals, but not all of them are equally developed or effective.**
 - He pays special attention to the role of organic intellectuals in challenging capitalist hegemony and building a counter-hegemonic bloc.

How do Organic

Intellectuals Challenge Capitalist Hegemony?

- **Capitalist hegemony is not only based on coercion and violence, but also on consent and persuasion.**
 - The dominant class uses various institutions and practices, such as **education, media, religion, culture, etc.**, to spread its ideology and values among the subordinate classes and to incorporate them into its worldview.
- However, **hegemony is never complete or stable**. It is always contested and resisted by alternative forms of consciousness and culture that express the needs and demands of the oppressed classes and groups.
 - This is where organic intellectuals play a crucial role. They help to articulate these alternative forms of consciousness and culture into a coherent and comprehensive worldview that challenges the dominant one.

Note:



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- They also help to connect different **classes** and **groups that share common interests** and goals into a historical bloc that can act as a collective agent of historical change.
- Organic intellectuals **do not impose their ideas on the masses, but rather engage in a dialogical process with them.**
- They respect their common sense, but also critique its limitations and contradictions. They educate them, but also learn from them. They inspire them, but also follow them.

Ethical Concerns of Organ Donation and Transplantation

Why in News?

Recently a man from Odisha, who was declared brain dead after a severe head injury, has given a **new lease of life to four people in three different states.**

- While organ transplantation **gives new life to someone it also surfaces ethical issues** such as the consent of the donor, human rights violation, organ trafficking etc.

What is the Scenario of Organ Donation and Transplantation in India?

- **Donation and Transplantation:** India conducts the **3rd highest number of transplants** in the world. Organs from deceased donors accounted for nearly **17.8% of all transplants in 2022.**
 - The total number of deceased organ transplants climbed from 837 in 2013 to 2,765 in 2022.
 - The total number of organ transplants – with organs from both deceased and living donors – increased from **4,990 in 2013 to 15,561 in 2022.**

How is Organ Donation Regulated in India?

- In India, **Transplantation of Human Organs Act, 1994** provides various regulations for the removal of human organs and its storage. It also regulates the **transplantation of human organs for therapeutic purposes** and for the prevention of commercial dealings in human organs.
- In February 2023, the Ministry of Health and Family Welfare notified **National Organ Transplantation Guidelines**, allowing those above **65 years of age to receive an organ for transplantation** from deceased donors.

- The **guidelines have removed** the age limit for organ recipients, eliminated the domicile requirement, and **abolished registration fees previously charged** by certain states like Gujarat, Telangana, Maharashtra, and Kerala.

What are the Ethical Concerns Related to Organ Donation and Transplantation?

➤ Living Persons:

○ Violates the Traditional Rule of Medicine:

- Kidney donors are known to live healthy lives. However, studies in the European Union and China have shown that **a third of them are vulnerable to urinary and chest infections, which violates the first traditional rule of medicine, *primum non nocere* (above all, do no harm).**
- **One person becomes a patient** to benefit another person **who is already a patient.**

○ Donation is Prone to Trafficking:

- Organ **donation is susceptible to trafficking** when there is **illegal and unethical activity involved** in the acquisition, transportation, or transplantation of organs.
- In its 1991 document “Guiding Principles on Human Organ Transplantation,” the **World Health Organisation (WHO)** expresses concern over “the rise of commercial traffic in human organs, particularly from living donors who are unrelated to recipients.”

○ Emotional Coercion:

- The relationship between the **donor and recipient influences the donor’s motivation** for organ donation. Living related donors are genetically related to the recipient and often **feel obligated due to family ties and emotional bonds.**
- Ethical concerns include the potential for undue influence, **emotional pressure, and coercion.**

➤ Deceased Person:

○ Consent and Autonomy:

- It is important to determine whether the person had expressed their consent or **refusal for organ donation while they were alive.**
- If the person’s wishes are unknown, it can be ethically challenging to make decisions on their behalf.

○ Allocation and Fairness:

Note:

- Determining how organs are **allocated fairly and equitably is an ongoing ethical concern.**
- Ethical concerns can emerge when there are **disparities in access to transplantation based on factors such as wealth**, social status, or geographical location.

- **Transparency and Public Trust:**
- The ethical concerns related to disclosure of information, the handling of organ procurement and transplantation procedures, and the management of organ donation registries **are important considerations.**

Note:

- While both deceased and living organ transplantation **have their own ethical considerations**, the **absence of harm to living donors**, respect for autonomy, and fairness in allocation **make deceased organ transplantation generally considered more ethically preferable.**

What are the WHO's

Guiding Principles Related to Organ Donation?

- There are eleven guiding principles some are as follows:
 - **Guiding Principle 1:**
 - Cells, tissues and organs may be removed from the **bodies of deceased persons for the purpose of transplantation** if:
 - Any consent required by law is obtained, and
 - There is no reason to believe that the deceased person objected to such removal.
 - **Guiding Principle 2:**
 - Physicians determining that a **potential donor has died** should **not be directly involved in cell, tissue or organ removal** from the donor or subsequent transplantation procedures; nor should they be responsible for the care of any intended recipient of such cells, tissues and organs.
 - **Guiding Principle 3:**
 - Deceased donations should **maximize therapeutic potential**, while living adult donors should comply with domestic regulations. Typically, living donors **should have a genetic, legal, or emotional connection** to their recipients.
 - **Guiding Principle 4:**
 - No organs should be **taken from living minors for transplantation**, except for limited exceptions allowed by national law. Special measures must be implemented to safeguard minors, and whenever possible, their consent should be obtained before donation. The same principles apply to legally incompetent individuals (who are not able to testify or stand trial).
 - **Guiding Principle 5:**
 - Donations of cells, tissues, and organs must be **voluntary and without monetary compensation**. The sale or purchase of these items for transplantation should be prohibited.
 - However, reasonable and verifiable expenses incurred by the donor, including loss of income, can be reimbursed.
 - Additionally, covering the costs of recovery, processing, preservation, and supply of human cells, tissues, or organs for transplantation is allowed.



Note:

Miscellaneous

Highlights

- Civilian and Gallantry Awards
- India Approves Ratification of HQ Agreement with CDRI
- QS World Ranking 2024
- Global Liveability Index 2023
- International Day of Yoga 2023
- Gandhi Peace Prize
- Women 20 Summit 2023
- Harmonized Guidelines and Space Standards for Universal Accessibility in India
- Daitari Greenstone Belt

Civilian and Gallantry Awards

CIVILIAN AND GALLANTRY AWARDS

CIVILIAN AWARDS

Bharat Ratna

- India's **highest civilian award**; instituted in **1954**
- Awarded for exceptional service/performance of the highest order in any field of human endeavour
- Award includes certificate & medallion (no monetary grant)
- Recommended to President by the PM
- Can be given (max) **thrice per year**



Padma Awards

- Instituted in **1954**; announced annually on **eve of Republic Day**
- Recognises achievements in all fields/disciplines involving **public service**
- Categories: Padma **Vibhushan** > Padma **Bhushan** > Padma **Shri**
- Recommended by **Padma Awards Committee** (constituted by PM annually)
- **Suspended twice** - 1978-79 and 1993-97
- Max no. of awards per year - **120**





GALLANTRY AWARDS

- **Wartime** Gallantry instituted on **26th January 1950**
- **Peacetime** Gallantry instituted on **4th January 1952**
- **Announced twice** a year - Republic Day and Independence Day
- Order of Precedence - **Param Vir Chakra** > **Ashoka Chakra** > **Mahavir Chakra** > **Kirti Chakra** > **Vir Chakra** > **Shaurya Chakra**

◦ Eligibility -

- » All officers of all ranks (**Army, Navy, IAF**), Reserve forces, **Territorial army**
- » **People providing nursing services** under any of the above forces

Wartime Gallantry Awards





Param Vir Chakra
Maha Vir Chakra
Vir Chakra

Peacetime Gallantry Awards





Ashoka Chakra
Kirti Chakra
Shaurya Chakra



Note:

India Approves Ratification of HQ Agreement with CDRI

Why in News?

Recently, the Union Cabinet has given its approval for ratifying the **Headquarters Agreement (HQA)** between the Government of India and the **Coalition for Disaster Resilient Infrastructure (CDRI)**.

What is CDRI?

➤ About:

- CDRI is a global partnership of national governments, **United Nations** agencies, multilateral development banks, private sector, and academic and knowledge institutions that work on **promoting the resilience of infrastructure systems to climate and disaster risks**.

➤ Aim:

- Ensure **sustainable development** by supporting countries in developing policies, standards, guidelines, and best practices for resilient infrastructure.

➤ Members:

- Since its inception, **31 countries, 6 international organizations and 2 private sector organizations** have joined CDRI as members.
- 6 International Organizations:** **Asian Development Bank (ADB), World Bank Group, United Nations Development Programme (UNDP), United Nations Office for Disaster Risk Reduction (UNDRR), European Union, European Investment Bank.**

➤ Benefits of Ratifying the HQA:

- Ratifying the HQA will facilitate the grant of **exemptions, immunities and privileges to CDRI** as contemplated under Section-3 of the **UN (Privileges & Immunities) Act, 1947**.
- This will enable **CDRI to operate effectively as an international organization** and to **collaborate with other international entities** in pursuing its objectives.
- This will also enhance **India's credibility and visibility** as a founding member and **host country of CDRI**.

➤ Significance for India:

- CDRI provides a platform for **India to emerge as a global leader in climate Action and Disaster Resilience**.

- It boosts India's soft power, but more importantly it has wider connotation than just economics, as synergy between disaster risk reduction, **Sustainable Development Goals (SDGs)** and climate accords.

What are the Initiatives of CDRI?

➤ Infrastructure for Resilient Island States (IRIS):

- India launched this initiative as a part of the CDRI that would focus on building capacity, and having pilot projects, especially in **Small Island Developing States or SIDS**.

➤ Infrastructure Resilience Accelerator Fund:

- The Infrastructure Resilience Accelerator Fund is a fund supported by both the **United Nations Development Programme (UNDP)** and **United Nations Office for Disaster Risk Reduction (UNDRR)**.
- It is a trust fund that will be managed by the **UN Multi-Partner Trust Fund Office (UN MPTFO)** to help in improving the ability of infrastructure systems to withstand disasters, with a special focus on developing countries and SIDS.

QS World Ranking 2024

Why in News?

Indian Institute of Technology (IIT) Bombay has achieved a significant milestone by breaking into the **world's top 150 universities** in the latest edition of the **Quacquarelli Symonds (QS) World University Ranking**. This remarkable leap comes after eight years since the **Indian Institute of Science (IISc) Bangalore** achieved a similar feat.

- However, the ranking list has witnessed fluctuations, with IISc falling 70 positions. These changes are attributed to the **revised ranking parameters** introduced by Quacquarelli Symonds, the UK-based ranking agency.

What are the Key Insights from QS World University Ranking?

➤ Global Rankings Overview:

- Massachusetts Institute of Technology (MIT)** tops the World University Ranking for the twelfth consecutive time.
- National University of Singapore** becomes the **first Asian university** to enter the top 10.

Note:

- **Indian Universities in QS World Rankings:**
 - India is the **seventh most represented country globally**, with 45 universities ranked.
 - IIT Bombay achieves its highest rank ever, **securing the 149th position** globally in the QS World University Ranking.
 - IIT Bombay demonstrates excellence in **employment reputation and citation per faculty**. Notable improvement in citation per faculty, rising from 55.1 to 73.1.
 - **University of Delhi and Anna University make their debut** in the top 500 universities.

QS RANKING (INDIAN INSTITUTIONS)

National Rank	2024 Rank	2023 Rank	Institution Name
1	149	172	IIT, Bombay (IITB)
2	197	174	IIT, Delhi (IITD)
3	225	155	Indian Institute of Science
4	271	270	IIT, Kharagpur (IIT-KGP)
5	278	264	IIT, Kanpur (IITK)
6	285	250	IIT, Madras (IITM)
7	364	384	IIT, Guwahati (IITG)
8	369	369	IIT, Roorkee (IITR)
9	407	521-530	University of Delhi
10	427	551-560	Anna University

Source: QS

What are the Revised Ranking Parameters in QS?

- QS introduced three new indicators: **sustainability, employment outcomes, and international research network**, each with a weightage of 5%.
- Adjustments were made to existing parameters: academic reputation, faculty-student ratio, and employer reputation.
- Decreased weightage for faculty-student ratio.
- **Impact on Indian Institutions:**
 - Reduction in **faculty-student ratio weightage** **benefits Indian institutions** overall.
 - However, research-focused institutions like IISc face challenges due to decreased weightage.
 - Employability outcomes indicator benefits several Indian institutions.

Parameter	Previous Weightage	Revised Weightage
Academic Reputation	40%	30%
Faculty-Student Ratio	15%	10%
Employer Reputation	10%	15%
Sustainability (New Indicator)	-	5%
Employment Outcomes (New Indicator)	-	5%
International Research Network (New Indicator)	-	5%

What is QS

World University Rankings?

- QS World University Rankings are released annually by **Quacquarelli Symonds (QS)**.
- The rankings evaluate the **performance and quality of universities worldwide**.
- The methodology considers indicators such as academic reputation, faculty-student ratio, employer reputation, sustainability, employment outcomes, international research network, citations per faculty, international faculty ratio, and international student ratio.
- They provide **rankings by subject, region, student city, business school, and sustainability**.

Global Liveability Index 2023

Why in News?

The **Economist Intelligence Unit** released its 2023 report on **global liveability index**, placing **Austria's capital Vienna** as the **top ranked city** to live in 2023.












What are the

Major Highlights of the Index?

- **About:**
 - It rates **living conditions in 173 cities** across five categories: **stability, health care, culture and environment, education and infrastructure**.
- **List of Top Ten Cities to Live in 2023:**

Note:

Top 10 positions











City	Location		Rank
Vienna	Austria		1
Copenhagen	Denmark		2
Melbourne	Australia		3
Sydney	Australia		4
Vancouver	Canada		5
Zurich	Switzerland		6
Calgary	Canada		7
Geneva	Switzerland		7
Toronto	Canada		9
Osaka	Japan		10
Auckland	New Zealand		10

Source: EIU.

- **Observations Related to Developing Countries' Progress:** Many developing nations have shown incremental improvements in their livability rankings.
 - **Asia-Pacific cities** have demonstrated significant progress, while **Western European cities** have slipped in the 2023 rankings.
 - The report highlights the **growing emphasis on healthcare and education in Asian, African, and Middle Eastern countries**, signalling a positive trend.
 - However, it also notes a decline in stability scores attributed to civil unrest in certain parts of the world.
- **Indian Cities:**
 - **New Delhi** and **Mumbai** are at **141st** position and **Chennai** at **144th**. **Ahmedabad** and **Bengaluru** are ranked **147** and **148**, respectively.
- **Challenges Faced by Specific Cities:**
 - **Kyiv, Ukraine:** Despite ongoing efforts, **Kyiv** ranks at a lowly **165th** out of **173** cities, reflecting the challenges faced by the war-ravaged capital.
 - **Damascus, Syria, and Tripoli, Libya:** These cities continue to occupy the bottom positions on the livability index, **similar to the 2022**.

Bottom 10 Positions:

Bottom 10 positions

City	Location		Rank
Douala	Cameroon		164
Kyiv	Ukraine		165
Harare	Zimbabwe		166
Dhaka	Bangladesh		166
Port Moresby	Papua New Guinea		168
Karachi	Pakistan		169
Lagos	Nigeria		170
Algiers	Algeria		171
Tripoli	Libya		172
Damascus	Syria		173

International Day of Yoga 2023

Why in News?

The 9th **International Day of Yoga (IDY)** was celebrated on June 21st with various events and initiatives taking place across the country.

- This year's IDY theme, **"Yoga for Vasudhaiva Kutumbakam,"** which highlights India's socio-cultural heritage and promotes unity.

What are the Key Highlights of IDY 2023?

- **Promoting Tribal Artisans:**
 - **Tribal Cooperative Marketing Development Federation of India Ltd (TRIFED)** collaborated with the **Ministry of Ayush** to supply yoga mats exclusively **made by tribal artisans**.
 - These mats represent the diverse **cultural heritage of India's tribes**, showcasing their stories, folklore, and artistic traditions.
 - TRIFED will highlight products and communities such as **Madur mats or Madhurkathi** from **Medinipur**, **Sabai Grass Yoga Mats** from **Mayurbhanj**, and **Gondha Grass mats** from **Jharkhand**.

Note:

- **Ocean Ring of Yoga:**
 - **Indian Navy** and Merchant ships will organize yoga demonstrations at ports and vessels of friendly countries, fostering global participation.
- **Yoga from the Arctic to Antarctica:**
 - Coordination between the Ministry of External Affairs (MEA) and the Ministry of Ayush to organize yoga events in countries along the **Prime Meridian line and UN member countries**.
 - Yoga sessions to be held at **Himadri in the Arctic** and **Bharati in Antarctica**, showcasing yoga's reach to extreme regions.
- **Yoga Bharatmala and Yoga Sagarmala:**
 - Indian armed forces, including **Indo-Tibetan Border Police (ITBP)**, **Border Security Force (BSF)**, and **Border Roads Organization (BRO)**, will form a chain of yoga demonstrations.
 - Yoga Sagarmala will feature **yoga along the Indian coastline** along with yoga demonstrations on the flight deck of **INS Vikrant**.
- **National Level Initiatives:**
 - The Prime Minister will **lead yoga at the United Nations Headquarters in New York**, demonstrating a global commitment to yoga.
 - The Ministry of Ayush encourages **"Har Aangan Yoga"** which means Yoga in the courtyard of every house, by enabling yoga observation at the village level.

Gandhi Peace Prize

Why in News?

Gita Press, Gorakhpur, a 100-year-old institution that publishes **Hindu religious texts** and promotes **Gandhian ideals** of peace and social harmony, has been **awarded the Gandhi Peace Prize for 2021** by the Government of India.

- The prize was announced by the **Ministry of Culture**.

What is the Gandhi Peace Prize?

- **About:**
 - Gandhi Peace Prize Awards for **Social, Economic and Political transformation through Non-violence** was instituted in the year **1995**, on the occasion of the **125th birth anniversary of Mahatma Gandhi**, as a **tribute to his ideals and contributions to humanity**.

- **Reward:**
 - The award carries an amount of Rs 1 crore, a citation, a plaque and a traditional handicraft or handloom item.
 - The award is **conferred by the President of India at a function in Rashtrapati Bhavan**.
- **Consideration:**
 - This award is given to individuals, associations, institutions or organizations who have worked selflessly for peace, non-violence and amelioration of human sufferings.
 - The award is open to **all persons regardless of nationality, race, language, caste, creed or gender**.
 - The Award **may be divided between two persons / institutions** who are considered by the Jury to be equally deserving of recognition in a given year.
 - **Work by a person since deceased cannot be the subject of an Award**. If, however, **his death occurred subsequent to a proposal having been submitted to the Jury (headed by the Prime Minister)** in the manner stipulated in the Code of Procedure, then a **Posthumous Award may be made**.
- **Previous Awardees:**
 - **Organizations:** **Indian Space Research Organisation (ISRO)**, **Ramakrishna Mission**, Grameen Bank of Bangladesh, Vivekananda Kendra, Akshaya Patra, Ekal Abhiyan Trust, Sulabh International
 - **Luminaries:** Nelson Mandela, Sultan Qaboos bin Said Al Said, Oman (2019) and Bangabandhu Sheikh Mujibur Rahman, Bangladesh (2020).

Gita Press

- Established in **1923** by **Jaya Dayal Goyandka and Hanuman Prasad Poddar**, Gita Press is one of the **world's largest publishers of Hindu religious texts**, having published 41.7 crore books in 14 languages, including **16.21 crore copies of Shrimad Bhagvad Gita**.
- Gita Press also runs a **monthly magazine called Kalyan**, which covers topics such as spirituality, culture, history, ethics and morality.
 - It also runs a **charitable hospital called Kalyan Chikitsalaya in Gorakhpur**, which provides free medical services to the poor and needy.
- **Mahatma Gandhi**

Note:

Mohandas Karamchand Gandhi



“The weak can never forgive. Forgiveness is the attribute of the strong.”

Brief Description

Birth: 2nd October 1869, Porbandar (Gujarat).

2nd October is observed as **International Day of Non-Violence**.

Profile: Lawyer, Politician, Social activist, Writer and led Nationalist Movement.

Father of the Nation (first called by Netaji Subhash Chandra Bose).

Ideology: Believed in the ideas of non-violence, Truth, Honesty, Care for Mother Nature, Compassion, Welfare of Downtrodden etc.

Political Mentor: Gopal Krishna Gokhale

Death: Shot dead by Nathuram Godse (30th January, 1948).

30th January is observed as **Martyrs' Day**

Nominated for the Nobel Peace Prize five times.



Gandhi in South Africa (1893-1915)

Used satyagraha against racist regime (Native Africans and Indians were discriminated).

Pravasi Bharatiya Divas (PBD) is celebrated every year on 9th January, to commemorate his return from South Africa.

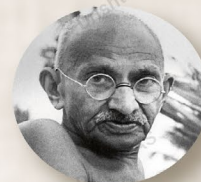
Contribution in India's Freedom Struggle

Small-scale movements like Champaran Satyagraha (1917)—First Civil Disobedience, Ahmedabad Mill Strike (1918)—First Hunger Strike, and Kheda Satyagraha (1918)—First Non-Cooperation.

Nationwide Mass Movements: Against Rowlatt Act (1919), Non-Cooperation Movement (1920-22), Civil Disobedience Movement (1930-34), Quit India Movement (1942).

Gandhi-Irwin Pact (1931): Between Gandhi and Lord Irwin that marked the end of a period of civil disobedience.

Poona Pact (1932): Between Gandhi and **B.R. Ambedkar**; this abandoned the idea of separate electorates for the depressed classes (Communal Award).



Books Written

Hind Swaraj, My Experiments with Truth (Autobiography)

Weeklies

Harijan, Navjivan, Young India, Indian Opinion.

Gandhi Peace Prize

is given by India for social, economic, and political transformation through Gandhian methods.

“Happiness is when what you think, what you say, and what you do are in harmony.”

“You must not lose faith in humanity. Humanity is an ocean; if a few drops of the ocean are dirty, the ocean does not become dirty”

Note:

Women 20 Summit 2023

Why in News?

Recently, as a part of **India's G20 Presidency**, the **Women 20 (W20) Summit** with the theme '**Women-Led Development- Transform, Thrive and Transcend**' held in Mahabalipuram, Tamil Nadu.

- The summit aimed to celebrate the **power of women empowerment** and address key issues related to economic empowerment, trade and investment, and care economy.

What are the Key

Highlights of the W20 Summit?

- Discussions on **breaking the invisible barriers and biases that prevent women** from reaching higher positions and leadership roles in various fields were held.
- Government initiatives such as **Self Help Groups(SHGs)**, **PM Mudra Scheme** and **GeM portal** which allow **women access to market** and finance are highlighted.
- **Gender disparities** in economic participation are highlighted as women often face inequalities in accessing economic opportunities, including financial resources, markets, and trade networks.
- Participants have discussed systemic barriers, such as **lack of access to credit, limited property rights, and discriminatory practices**, which hinder women's economic empowerment.
- Celebration of strength, resilience, and progress in women's empowerment was witnessed.

What is W20?

- **About:**
 - W20 is an official engagement group under the **G20**.
 - It was established in 2015 with the aim of **focusing on gender equity and women's empowerment**.
 - First W20 Summit was held during **Turkey's G20 Presidency in 2015**.
 - The group seeks to mainstream **gender considerations into G20 discussions** and translate them into policies and commitments.
 - It influences the G20 agenda and promotes gender-sensitive approaches to various global challenges.

➤ Priorities:

- Women's Entrepreneurship
- Grassroot Women Leadership
- Bridging the Gender Digital Divide
- Education & Skill Development
- Climate Change

➤ Composition:

- W20 comprises a **transnational network of delegates**.
- Delegates represent non-government women's organizations, civil society, female entrepreneurs, businesses, and think tanks.
- The network spans across G20 member states.

➤ W20 India Presidency:

- W20 India assumed the presidency from W20 Indonesia on December 12, 2022.

Harmonized Guidelines and Space Standards for Universal Accessibility in India

Why in News?

Harmonised Guidelines and Space Standards for Universal Accessibility in India-2021 prepared by the Ministry of Housing and Urban Affairs has been amended in **RPwD (Amendment) Rules, 2023**.

What are Harmonised Guidelines and Space Standards for Universal Accessibility in India-2021?

- It is a set of rules and standards for making the **physical environment, transportation, information and communication, and other facilities and services accessible for persons with disabilities (PwDs)** in India.
 - The guidelines are a revision of the Harmonised Guidelines and Space Standards for
 - **Barrier-Free Built Environment for Persons with Disabilities and Elderly Persons** released in 2016.
 - Earlier, the guidelines were for creating a **barrier-free environment, but now, the focus is on universal accessibility**.
- The guidelines are not just for **Persons with Disabilities (PwDs)**, but also for those involved in **planning projects**, from the construction of government buildings to master-planning cities.

Note:



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- The nodal ministry for the implementation of the guidelines is the **Ministry of Housing and Urban Affairs (MoHUA)**.

What is the Legislative

Framework Related to PwDs in India?

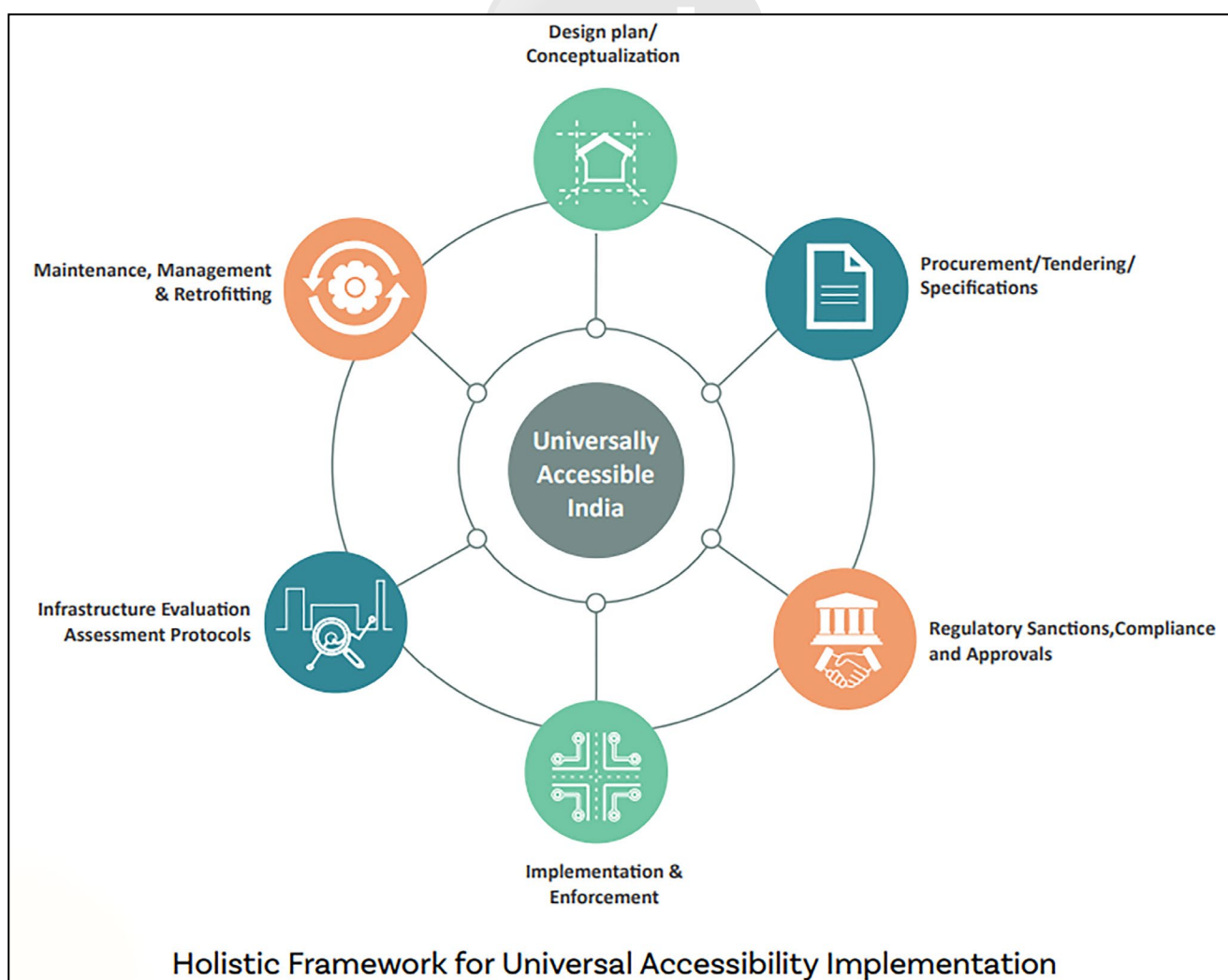
- India ratified the **UN Convention on the Rights of Persons with Disabilities (CRPD)** in 2007 and passed the **Rights of Persons with Disabilities Act in December 2016** which came into effect in 2017.
 - As per the RPwD Act 2016 - **21 types of disabilities have been recognized**.
- As per **Section 40 of RPwD Act 2016**, the Central Govt in consultation with the **Chief Commissioner (for PwDs)** formulate rules for persons with disabilities laying down the standards of accessibility for the

physical environment, transportation, information and communication, including appropriate technologies and systems and other facilities and services provided to the public in urban and rural areas.

- Under this, many initiatives, such as “**Sugamya Bharat Abhiyan**” (**Accessible India Campaign**), are being taken up.

➤ Other Initiatives:

- **Unique Disability Identification Portal**
- **Accessible India Campaign**
- **DeenDayal Disabled Rehabilitation Scheme**
- **Assistance to Disabled Persons for Purchase/fitting of Aids and Appliances**
- **National Fellowship for Students with Disabilities**



Note:

Daitari Greenstone Belt

Why In News?

A recent research has unveiled remarkably well-preserved volcanic and sedimentary rocks in **Singhbhum craton**, eastern India, dating back 3.5 billion years.

- Singhbhum craton is **stretched across Jharkhand and Odisha between Chhota Nagpur plateau and the Eastern Ghats**.
- These findings shed light on India's geologic history and its **similarities to regions in South Africa and Australia**.

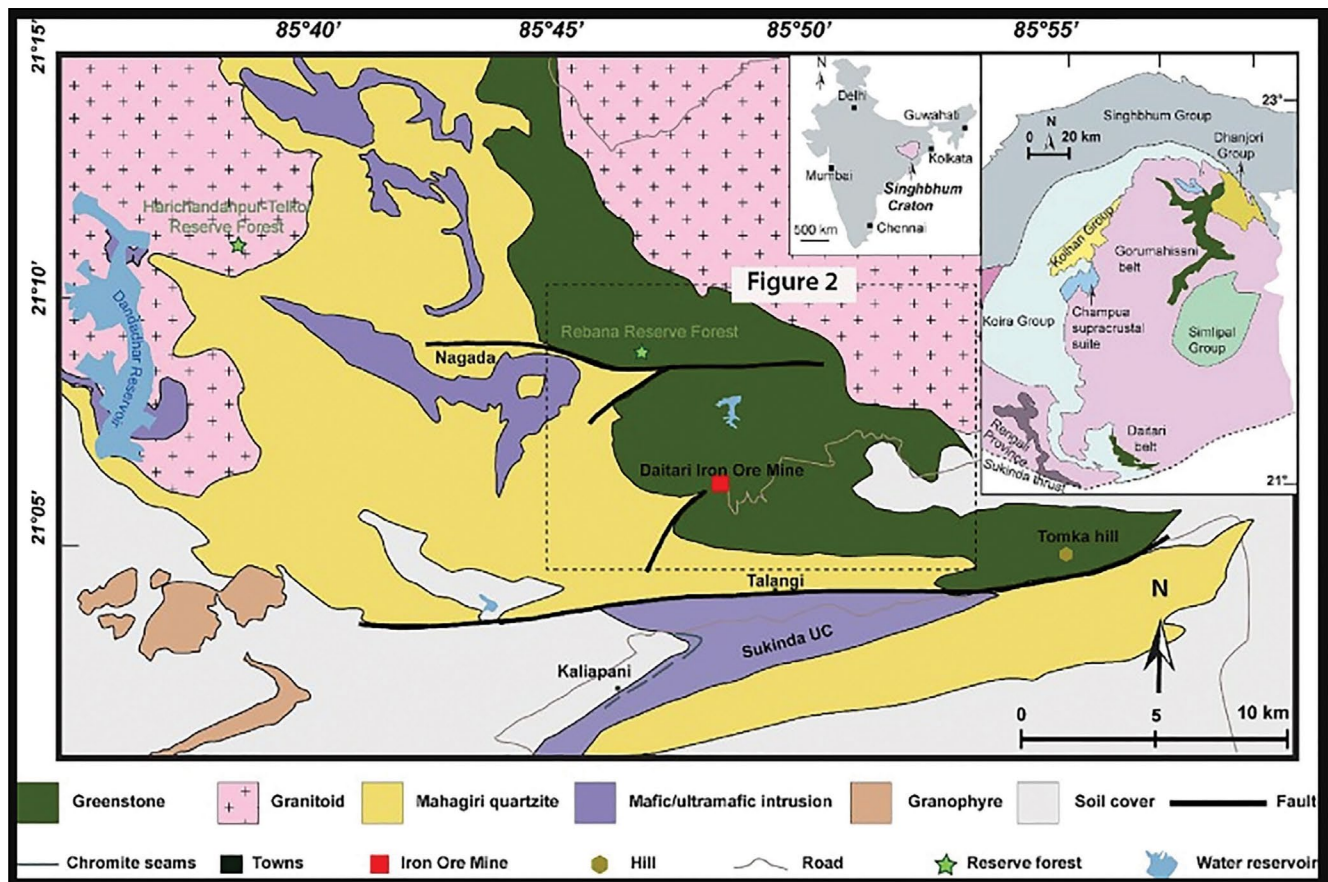
What are the Findings?

- **Study Area:**

- The study focused on volcanic and sedimentary rocks that **formed approximately 3.5 billion years ago** in the **Daitari greenstone belt** in the Singhbhum Craton in east India.

➤ Geologic Makeup of Greenstones:

- The researchers discovered that the Daitari greenstone belt shares **similar geological characteristics** with the greenstones found in **South Africa's Barberton and Nondweni areas**, as well as those in **Australia's Pilbara Craton**.
- This similarity suggests a common geologic history for these regions.



➤ Sub-Marine Volcanic Activity:

- The study revealed that **sub-marine volcanic eruptions** were prevalent between **3.5 and 3.3 billion years ago**.
- These eruptions left behind **pillow lava formations** within the greenstone rocks of the Singhbhum,

Kaapvaal, and Pilbara cratons.

- **Pillow lava** is formed when **hot molten basaltic magma slowly erupted underwater and solidified rapidly** to form roughly spherical or rounded pillow shapes.

➤ Sub-Marine Sedimentary Rocks:

Note:

- Following silicic volcanism, sub-marine turbidity current deposits formed as the volcanic vents drowned.
- These sedimentary rocks provide valuable insights into sub-marine environments and were dated to approximately 3.5 billion years ago using precise **detrital U-Pb zircon data**.
 - Detrital zircon U-Pb geochronology is a **tool for sedimentological studies** such as provenance, correlation of successions, and definition of maximum depositional ages as well as **for studies concerning paleogeographic reconstructions and evolution of the continental crust**.

What is the Significance of Findings?

- **Understanding Ancient Environments:**
 - The study of ancient greenstones, including both volcanic and sedimentary rocks, allows scientists

to **gain insights into habitable environments on Earth during its early stages**. These rocks **serve as time capsules**, providing clues about the planet's evolution.

- **Geological Processes:**

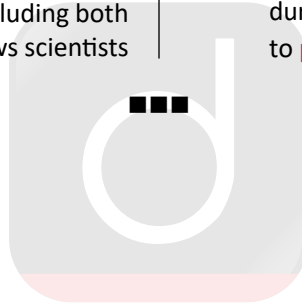
- These findings **contribute to our understanding of diverse volcanic processes** and the **geologic history of ancient continents**.

- **Geological Connections:**

- The similarities between the geology of India, South Africa, and Australia **suggest that these regions may have experienced similar geological processes** 3.5 billion years ago.

- **Paleogeographic Positioning:**

- Further studies may shed light on the paleogeographic positioning of these ancient continents during that time and contribute to theories related to **plate tectonics**.



Note:

Rapid Fire Current Affairs

Highlights

- Classification of Aspartame as a Possible Carcinogen
- Banking on World Heritage: G-20 Currency Exhibition
- India and Tanzania Strengthen Defence Relations in JDCC Meeting
- Ajay Banga, Recognized on "Great Immigrants" List
- RBI Forecasts Further Decline in Gross Non-Performing Assets
- Government Defers TCS on International Credit Card Spends under LRS
- Canada's Open Work Permit Stream for H-1B Visa Holders
- India's 5G & Beyond Hackathon 2023
- Helen Keller Day
- National Exit Test (NExT)
- President Honors Armed Forces with Prestigious Service Awards
- Aadhaar Authentication for Birth and Death Registrations
- DPCGC Takes Action Against Obscene Content on OTT Platform
- Chandrayaan-3 to Retain Chandrayaan-2 Lander and Rover Names
- Recovery of Stolen Chola-Era Idols
- International Day against Drug Abuse and Illicit Trafficking
- Kendra Sahitya Akademi Bal Sahitya Puraskar 2023
- Kalasa Banduri Project on Mahadayi River
- Assam Flood & Beki River
- Biodegradable Utensils: BIS
- Canary Islands
- 'Made-in-Surat' Eco-Friendly Diamond
- Summer Solstice
- National Florence Nightingale Award
- Legal Counsel Challenges ED's Authority in PMLA Arrest Case
- Estonia Legalizes Same-Sex Marriage
- Integrated Simulator Complex 'Dhruv'
- US Senate Proposes 'NATO Plus Five' Defence Status for India
- NHAI's Knowledge Sharing Platform for Highway Development
- World Sickle Cell Day 2023
- Indigenous mRNA- Based Omicron- Specific Booster Vaccine
- 'One Nation One Helpline' Initiative for Childline Services
- Ex Khaan Quest 2023
- National Internet Exchange of India (NIXI)
- DAKSHTA: Empowering Young Professionals in Government Administration
- New Space India to Enhance Maritime Communication with MSS Terminals
- Dugdh Sankalan Sathi App
- NTPC's Rooftop Solar Project Empowers IIT Jodhpur
- The Right to Change One's Name
- Common Annual Confidential Report (ACR) in Armed Forces
- International Energy Agency
- Kari Ishad Mango Receives GI Tag
- Mayon Volcano
- Julley Ladakh (Hello Ladakh)
- Bio-Stimulants
- Phosphorus on Saturn's Moon Enceladus

Classification of Aspartame as a Possible Carcinogen

Recently, **Aspartame**, the world's most common **artificial sweetener**, has come under scrutiny as it is set to be declared a **possible cancer-causing substance** by the **International Agency for Research on Cancer (IARC)**, the cancer research arm of the **World Health Organization (WHO)**.

The IARC was created in 1965 by a resolution of the **World Health Assembly**, as the **specialized cancer agency** of the WHO. The objective of the IARC is to promote

international collaboration in cancer research. It comprises 27 member countries.

Aspartame is widely used in a variety of products, including **soft drinks, gelatin, confectionery, desserts, and sugar-free cough drops**.

Read more: **Artificial Sweeteners**

Banking on World Heritage: G-20 Currency Exhibition


India is hosting the **"Banking on World Heritage"** exhibition, showcasing currency notes from **G-20 countries**

Note:



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featuring **UNESCO world heritage sites**. The exhibition, held at the Indira Gandhi National Centre for Arts, highlights the **cultural significance of currency**. It features **Indian currency notes**. The event emphasizes that each **currency note carries a country's cultural heritage**. The G-20 comprises 19 countries and the European Union, with each member featuring their UNESCO world heritage sites on their currency notes.

	Sun Temple
	Ellora caves
	Kanchenjunga mountains
	Gujarat's "Rani Ki Vav" Stepwell

Read more: **UNESCO World Heritage Sites in India**

India and Tanzania Strengthen Defence Relations in JDCC Meeting

The second edition of the Joint Defence Cooperation Committee (JDCC) meeting between **India and Tanzania** took place in **Arusha, Tanzania** recently. The meeting focused on exploring collaborative opportunities to enhance **security in the Indian Ocean Region**. Both sides agreed on a five-year roadmap for defence cooperation, encompassing various initiatives such as **customised training, capacity building, maritime cooperation, infrastructure development, and collaboration in defence equipment and technology**.

Tanzania is the largest country in East Africa and includes the islands of **Zanzibar, Pemba, and Mafia**. The **Maasai** are a nomadic tribe who live in parts of **Tanzania and Kenya**. **Mount Kilimanjaro**, Africa's highest point is in Tanzania.



Read more: **India and Tanzania Relations, Indian Ocean Region**

Ajay Banga, Recognized on "Great Immigrants" List

Ajay Banga, the president of the **World Bank**, has been included in the annual "Great Immigrants" list curated by the Carnegie Corporation of New York. He became **World Bank chief in June 2023** and is the **first-ever Indian American** to lead the institution.

The "Great Immigrants" initiative pays homage to the legacy of **Andrew Carnegie (a Scottish immigrant)**, recognizing exceptional individuals who have achieved **success in America** and inspire others to do the same, fostering a vibrant and resilient democracy.

Read more: **World Bank**

RBI Forecasts Further Decline in Gross Non-Performing Assets

In its recent **Financial Stability Report (FSR)** for **June 2023**, the **Reserve Bank of India (RBI)** projected a **further decrease in the country's gross non-performing assets (GNPA)** for scheduled commercial banks. The GNPA, which reached a **10-year low of 3.9% in March 2023**, is expected to **decrease to 3.6% by March 2024**. The report also highlighted the strengthening of banking and corporate sector balance sheets, with sustained growth in bank credit and low levels of non-performing assets. FSR assesses the **overall stability and health of the country's financial sector**.

NPAs refer to **loans and advances that have stopped generating income** for the lender, usually due to **default**

Note:

or non-payment by the borrower. GNPA's are the sum of all the loans that have been defaulted by the individuals who have acquired loans from the financial institution.

Read more: [Financial Stability Report: RBI](#)

Government Defers TCS on International Credit Card Spends under LRS

In a reversal of its earlier decision, the Indian government has decided to defer the inclusion of **international credit card spending outside India** under the **Liberalised Remittance Scheme (LRS)**. This means that there will be **no levy of Tax Collected at Source (TCS)** on such transactions for now. The government has also extended the timeline for implementing the higher proposed TCS rates, pushing it from July 1 to October 1, 2023. The threshold of **Rs 7 lakh per financial year per individual** for TCS on all LRS payments will still apply, meaning that there will be no TCS on remittances up to Rs 7 lakh. Beyond this threshold, varying rates of TCS will be levied depending on the purpose of remittance.

TCS is the tax payable by a seller, which he collects from the buyer at the time of sale of certain goods or services. TCS is governed by **Section 206C of the Income-tax Act**, which specifies the goods or services on which TCS is applicable and the rates of TCS.

Read more: [International Credit Card Spending Outside India under LRS](#)

Canada's Open Work Permit Stream for H-1B Visa Holders

Canada plans to create an open work-permit stream, allowing 10,000 American **H-1B visa holders** to come and work in Canada. The H-1B visa is a non-immigrant visa that enables US companies to hire foreign workers with specialized expertise. Approved applicants under the program will receive open work permits of up to three years, giving them the flexibility to work for any employer across Canada.

This move is expected to benefit a significant number of Indian tech professionals who have been impacted by recent **layoffs at major US tech companies**.

Read more: [H-1B Visa, Recent Wave of Tech Layoffs](#)

India's 5G & Beyond Hackathon 2023

The Department of Telecommunications (DoT), Government of India has announced the **'5G & Beyond Hackathon 2023'**. The primary objective of this hackathon is to identify cutting-edge ideas with an India-focused approach that can be transformed into practical 5G and beyond products and solutions. It is open to individuals, students, **start-ups**, and academic institutions across India.

5G, short for "fifth generation," refers to the latest generation of wireless communication technology. 5G mainly works in 3 bands, namely **low, mid and high frequency spectrum**. It is designed to provide faster data speeds, lower latency (delay), increased network capacity, and improved reliability compared to its predecessors, such as 4G (LTE).

Read more: [5G](#)

Helen Keller Day

Optimism is the faith that leads to achievement, nothing can be done without hope." - Helen Keller. The Department of Empowerment of Persons with Disabilities under Ministry of Social Justice and Empowerment, in India observed Helen Keller's Day on June 27, 2023, commemorating the remarkable life and achievements of Helen Keller, who overcame her deafness and blindness to become an inspiration to millions.

Despite her **disabilities**, Keller's determination and perseverance led her to become a renowned writer, founder of the "American Foundation for the Blind," and a passionate advocate for people with disabilities. Her autobiography, "The Story of My Life," published in 1903, remains one of her most famous works. Other notable publications include "Optimism," "The World I Live In," and "My Religion."

Read more: [Person with Disabilities in India](#)

National Exit Test (NExT)

The **National Medical Commission** recently announced the **National Exit Test (NExT)**, which will serve as the two-step medical licentiate exam and replace the Foreign Medical Graduates Exam (FMGE) and the National Eligibility cum Entrance Test – Postgraduate

Note:



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(NEET-PG). Students admitted to the **MBBS course in 2019** will be the first batch to take the **National Exit Test (NExT)**.

The National Medical Commission is a **statutory body in India** that was **established in 2019** by the government to replace the **Medical Council of India (MCI)**.

Read more: **National Medical Commission, National Exit Test**.

President Honors Armed Forces with Prestigious Service Awards

Recently, President of India bestowed Distinguished Service Awards upon 84 serving and retired personnel of the armed forces and the Indian Coast Guard in New Delhi. The awards included 52 **Ati Vishisht Seva Medals (AVSMs)**, 3 **Uttam Yudh Seva Medals (UYSMs)**, and 28 **Param Vishisht Seva Medals (PVSMs)**.

AVSMs are awarded for **exceptionally distinguished service in the armed forces**. A Bar is added to AVSMs for **multiple instances of outstanding service**. UYSMs recognize exceptional **operational service during a war or specific military operations**. PVSMs recognize distinguished service of the **highest order in the armed forces**, honoring individuals who have displayed exceptional commitment and dedication to their duties.

Read more: **Gallantry Awards**

Aadhaar Authentication for Birth and Death Registrations

The Ministry of Home Affairs (MHA) has allowed the **Registrar General and Census Commissioner** to utilize **Aadhaar authentication** for birth and death registrations, following authorization from the Ministry of Electronics and Information Technology (MeitY). The Registrar, appointed under the Registration of Births and Deaths Act, will now have the option to **voluntarily verify the Aadhaar numbers** provided in the **reporting forms for births and deaths**. This authentication process aims to establish the **identity of individuals** such as children, parents, informants, and spouses.

The Registrar General and Census Commissioner is a government office responsible for overseeing the

registration of vital events such as births, deaths, and marriages. They play a crucial role in **maintaining accurate demographic data** and conducting **national censuses**.

Read more: **Safeguarding Aadhaar Data**

DPCGC Takes Action Against Obscene Content on OTT Platform

Recently, the Digital Publisher Content Grievances Council (DPCGC), a self-regulatory body for online curated content providers (OCCPs) in India, has taken action against the **Over-the-Top (OTT) platform ULLU** for streaming explicit and obscene content. Headed by retired Supreme Court Judge Justice A K Sikri, the council issued an order demanding the removal of such content within 15 days, citing violations of the **Information Technology Rules (2021)** and complaints raised by a dissatisfied viewer.

DPCGC addresses **consumer grievances and content-related issues**. It operates under the **Ministry of Information & Broadcasting** and enforces the **Code of Ethics** and regulations set by the government. The DPCGC consists of an **OCCP Council** and a **Grievance Redressal Board**.

Read more: **Over-the-Top (OTT) platform, Over-the-Top Challenge**

Chandrayaan-3 to Retain Chandrayaan-2 Lander and Rover Names

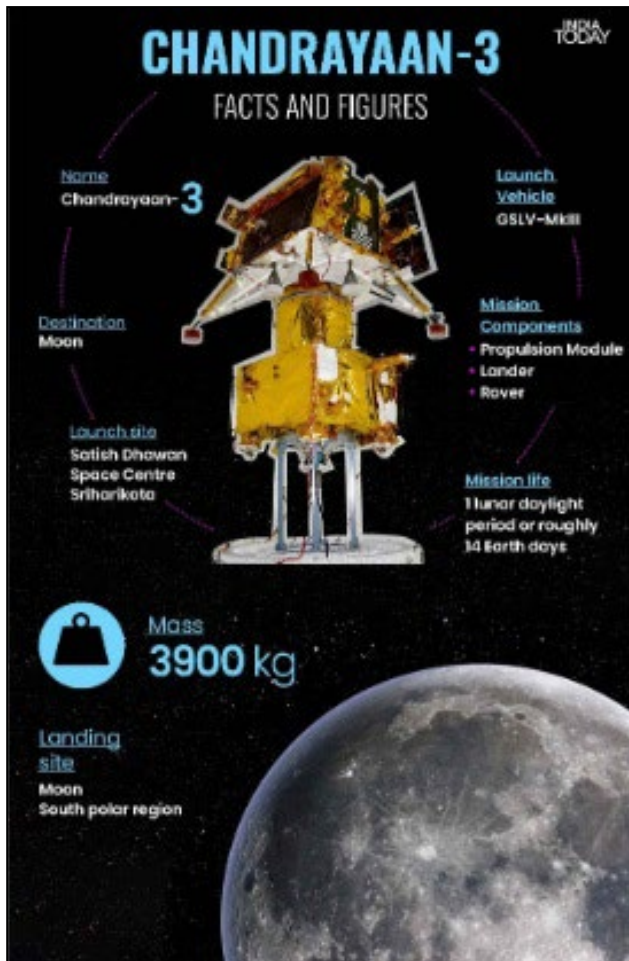
ISRO has recently announced its decision to use the same names for the lander and rover of the upcoming **Chandrayaan-3 mission**, following the unfortunate outcome of the **Chandrayaan-2 mission**, in which the lander named **Vikram** experienced a crash during its attempted soft landing on the lunar surface.

The lander of Chandrayaan-3 will be named '**Vikram**' in honour of **Vikram Sarabhai**, a key figure in India's space program, while the rover will be called '**Pragyan**'. The launch is scheduled for **mid-July 2023**, and the mission will carry out experiments and collect data through various payloads on the lander, rover, and propulsion module.

Note:



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Read more: [Indian Space Research Organisation, Chandrayaan-3 mission.](#)

Recovery of Stolen Chola-Era Idols

The Tamil Nadu Police's Idol Wing CID (IW CID) has made a significant breakthrough in recovering **16 antique idols that were stolen or went missing from Chola-era temples**. With assistance from U.S. authorities, the idols were traced to museums and art galleries in the United States. The idols, including exquisite **Chola-era bronzes**, were identified and are set to be returned to their respective temples in Tamil Nadu.

The **Cholas**, a powerful dynasty that ruled the southern regions of India from the 9th to the 13th century, left a lasting impact on the region's history and culture. Under monarchs like **Vijayalaya, Aditya I, and Rajendra Chola**, the Empire expanded its influence and established control over neighboring kingdoms, including the **Pallavas and Pandya Kings**. The Cholas implemented a

well-organized administration, dividing their vast kingdom into **mandalams and nadus**, with separate governors overseeing each region. They were patrons of art and architecture, with **Chola temples like Brihadeshwara and Rajarajeshwara** exemplifying the grandeur of **Dravidian temple architecture**. The Cholas' artistic legacy also included iconic sculptures, such as the **Nataraja sculpture depicting Lord Shiva** in his cosmic dance and bronze images that are renowned for their exquisite craftsmanship. The Chola dynasty's reign marked a golden age of prosperity, art, and cultural advancement in southern India.

Read more: [Chola Dynasty](#)

International Day against Drug Abuse and Illicit Trafficking

The **International Day against Drug Abuse and Illicit Trafficking**, or **World Drug Day**, is marked on 26 June every year which was decided by the **United Nations General Assembly** in 1987, to strengthen action and cooperation in achieving a world free of drug abuse. **Theme for 2023: People first: stop stigma and discrimination, strengthen prevention.** The aim of this year's campaign is to **raise awareness about the importance of treating people who use drugs with respect and empathy**; providing evidence-based, voluntary services for all; offering alternatives to punishment; prioritising prevention; and leading with compassion. The campaign also aims to **combat stigma and discrimination** against people who use drugs by promoting language and attitudes that are respectful and non-judgmental.

Every year on 26th June, the **United Nations Office on Drugs and Crime (UNODC)** also releases the **World Drug Report**.

Read more: [International Day against Drug Abuse and Illicit Trafficking, United Nations Office on Drugs and Crime.](#)

Kendra Sahitya Akademi Bal Sahitya Puraskar 2023

Recently, Priya A S has been awarded the prestigious **Kendra Sahitya Akademi Bal Sahitya Puraskar 2023** in the Malayalam language for her novel **Perumazhayathe**

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Kunjithalukal. The novel Perumazhayathe Kunjithalukal, set against the backdrop of the **2018 Kerala floods**, captures the resilience and unity displayed by children from diverse backgrounds during the calamity.

SAHITYA AKADEMI AWARDS

The 2nd-highest literary honour by the Govt of India, after the Jnanpith Award Estd. - 1954

CONFERRED BY

- Sahitya Akademi - India's National Academy of letters

AWARDS

- 24 awards for literary works in recognised languages (22 from 8th Schedule + English and Rajasthani)
- 24 awards for literary translations from and into the languages of India.

CRITERIA FOR AWARDS

- Author must be of Indian Nationality
- Book/work must be an outstanding contribution to the corresponding language/literature



SAHITYA AKADEMI AWARDS 2022

BHASHA SAMMAN

- Given for considerable contribution to the propagation, modernization or enrichment of the languages concerned
- Awarded to **Udaya Nath Jha** (valuable contribution in classical and mediaeval literature in the eastern region)

BOOKS SELECTED FOR TRANSLATION

- Yaad Vashem** (N. Nallathambi), **Akupacha Kavithalu** (Varala Anand) +15 more

IMP AWARDEES

- Anuradha Roy
- Badri Narayan
- Mr. Rajendran
- Praveen Bandekar
- Anis Ashfaq
- Manoj Kumar Goswami

WORK

- All the Lives We Never Lived** (Eng novel)
- Tumadi Ke Shabd** (Hindi poetry book)
- Kala Pani** (Tamil Novel)
- Ujavya Sondechya Bahulya** (Marathi Novel)
- Khwab Sarab** (Urdu novel)
- Bhool Satya** (Assamese)



Anuradha Roy



Badri Narayan

OTHER SAHITYA AKADEMI AWARDS

- Sahitya Akademi Bal Sahitya Puraskar:** Based on author's total contribution to children literature.
 - 2022 Award - **Ganesh Marandi** for **Hapan Mai** (book in Santhali)
- Sahitya Akademi Yuva Puraskar:** Books published by an author of age of 35 and below.
 - 2022 Award - **Pawan Nalat** for **Mi Sandarbha Pokharatoy** (Marathi Poetry)

Kalasa Banduri Project on Mahadayi River

Tenders for the controversial Kalasa Banduri Project, initiated by the previous Karnataka government just before its Assembly elections, **might face difficulties due to the absence of forest and environment clearance.**

Kalasa-Banduri project aims to improve the drinking water supply to the Belagavi, Dharwad, Bagalkot and Gadag districts in Karnataka. It involves building barrages

across Kalasa and Banduri, **two tributaries of the Mahadayi River** to divert water to the Malaprabha river (a tributary of **Krishna River**).

Mahadayi or Mhadei, **the west-flowing river, originates in Bhimgad Wildlife Sanctuary (Western Ghats)**, Belagavi district of Karnataka. The river is spread across the Districts of Goa, Karnataka and Maharashtra. The Kalasa-Banduri project is controversial due to **inter-state water disputes**, environmental concerns, and **opposition from local communities.**



Read More: [Mahadayi River & Kalasa-Banduri Project](#)

Assam Flood & Beki River

According to a daily flood report by the Assam State Disaster Management Authority (ASDMA), the flood situation in Assam remains critical, with **approximately**

20 districts being affected by continuous rainfall.

The **tributary of the Brahmaputra River, Beki**, is **currently flowing above the danger mark.** The floodwaters have caused significant damage to various infrastructure, including embankments, roads, and bridges.

Note:



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The Beki River, **originating in Bhutan** (also known as Kurissu River), is **one of the right-bank tributaries of the River Brahmaputra**. A significant portion of this river flows through Assam. It serves as a source of livelihood and mode of transport for the many communities in Assam.

Read More: [Brahmaputra River](#)

Biodegradable Utensils: BIS

Recently, the **Bureau of Indian Standards (BIS)** published **IS 18267: 2023 "Food Serving Utensils Made from Agri By-Products – Specification"**, aimed at reducing

plastic pollution and promoting sustainability.

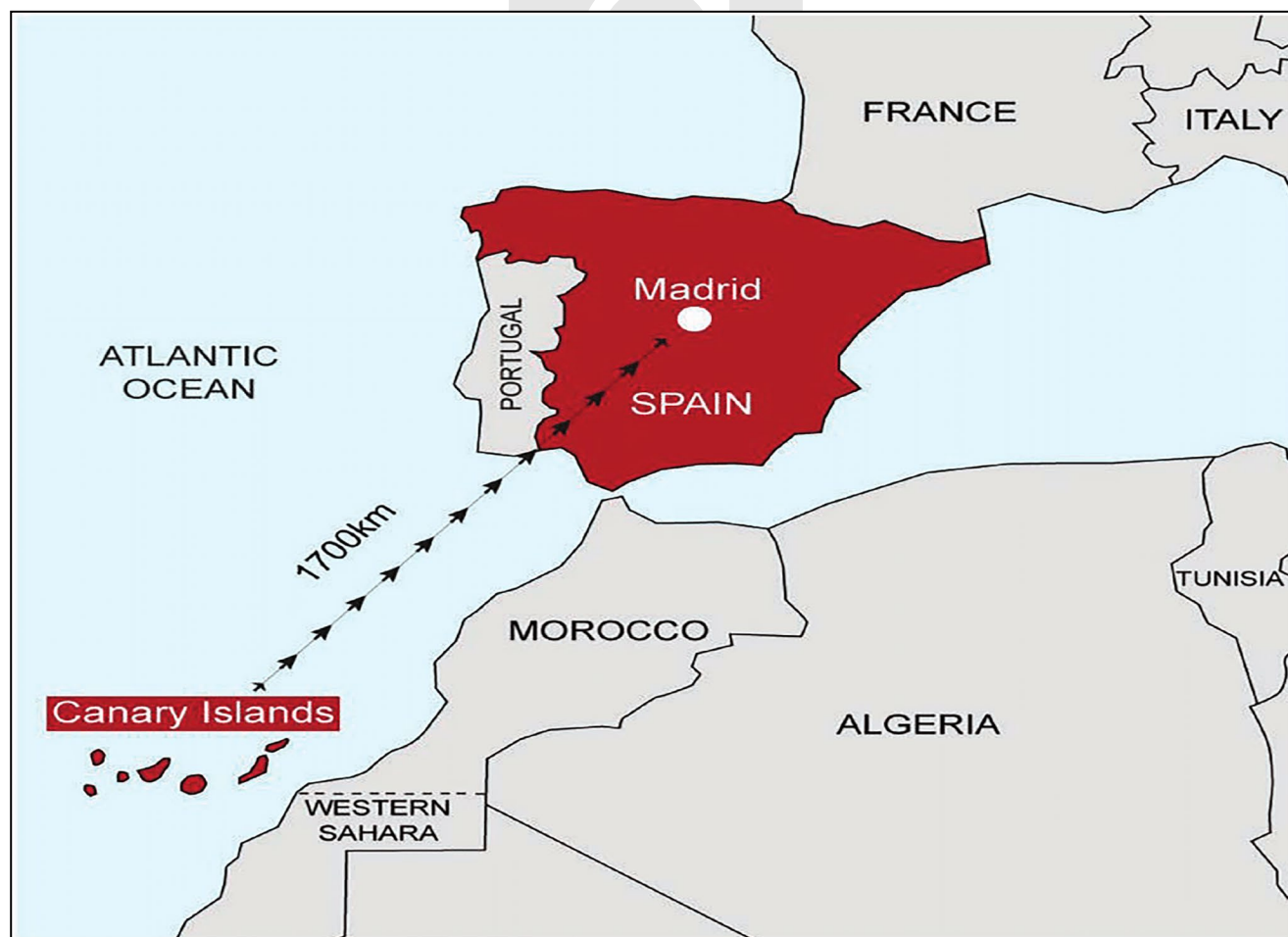
BIS has been established for the harmonious development of the activities of standardisation, marking and quality certification of goods and for matters connected therewith or incidental thereto. It was established by the BIS Act, 1986 and works under the aegis of the Ministry of Consumer Affairs, Food & Public Distribution. A new BIS Act 2016 was brought into force with effect from October 2017. The Act establishes the BIS as the **National Standards Body of India**.

Read More: [Bureau of Indian Standards \(BIS\)](#), [Plastic Pollution](#)

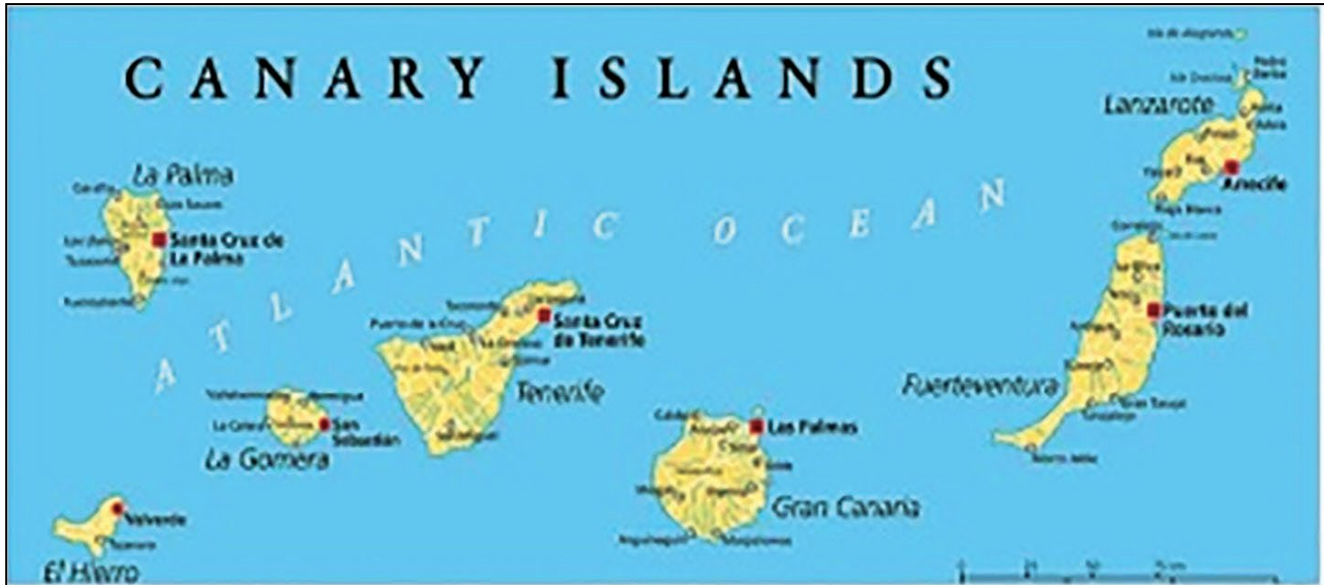
Canary Islands

According to information shared by two organizations that focus on migration, over 30 migrants died when a small boat traveling **towards Spain's Canary Islands** sank.

The Canary Islands of **Spain** consist of an **archipelago in the Atlantic Ocean**. Canaries **comprise the Spanish provinces of Las Palmas and Santa Cruz de Tenerife**. The Canary Islands were formed by volcanic eruptions millions of years ago.



Note:



Read More: [Canary Islands](#)

'Made-in-Surat' Eco-Friendly Diamond

During the Indian Prime Minister's visit to the White House, US, an **eco-friendly lab-grown diamond (LGD)** was presented as a gift to US First Lady Jill Biden. Produced in Surat, India, the diamond showcases the excellence of the country's diamond industry.

LGD are synthetic diamonds produced in laboratories, **possessing the same chemical composition and physical properties** as naturally occurring diamonds. They are manufactured through **High Pressure, High Temperature (HPHT)** or **Chemical Vapour Deposition (CVD)** methods using a seed diamond, a slice of another diamond. Lab-grown diamonds have applications in industrial tools and machinery due to their hardness, and pure synthetic diamonds are used as heat spreaders in electronics.

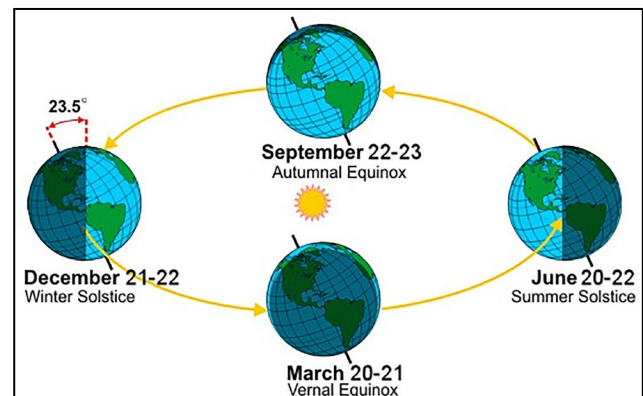
Read more: [Lab-Grown Diamonds](#)

Summer Solstice

The **summer solstice, occurring on June 21** in the **Northern Hemisphere**, signifies the **longest day of the year**. This astronomical event is a result of the **Earth's tilt on its axis**. This tilt, always at **23.5 degrees with respect to the Sun**, creates the phenomenon known as the **solstice**. The solstice, derived from the **Latin phrase meaning "sun stands still,"**. The **Northern Hemisphere**

receives **more direct sunlight** between March and September, leading to the **summer season** in this region. The amount of sunlight received during the **summer solstice varies based on latitude**, with areas further north experiencing more daylight. In fact, at the **Arctic Circle**, the sun remains visible throughout the entire day during the solstice.

In contrast, the **Southern Hemisphere** receives most sunlight on **December 21, 22 or 23** when the northern hemisphere has its longest nights—or the winter solstice.



Read more: [Summer Solstice: 21st June](#)

National Florence Nightingale Award

Recently, the **President of India** presented the **National Florence Nightingale Awards** for the years 2022

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and 2023 to the **Nursing professionals** at a function held at **Rashtrapati Bhavan**.

The **National Florence Nightingale Award** was instituted by the **Ministry of Health and Family Welfare, Government of India** in the year **1973** as a mark of recognition for the meritorious services rendered by the nurses and nursing professionals to the society.

Read more: **International Nurses Day**

Legal Counsel Challenges ED's Authority in PMLA Arrest Case

A senior counsel representing a petitioner before the **Madras High Court** questioned the **Directorate of Enforcement (ED)** jurisdiction to insist on custodial interrogation in a case related to the **Prevention of Money Laundering Act (PMLA)**.

The counsel argued that the **PMLA does not grant ED officials the powers of a Station House Officer (SHO)**, making their demand for custody of the arrested person legally questionable. Additionally, a Supreme Court ruling was cited that **restricts custodial interrogation beyond 15 days from the date of arrest, regardless of circumstances**.

The ED is a multi-disciplinary organisation mandated with investigation of **offences of money laundering and violations of foreign exchange laws**. It functions under the **Department of Revenue of the Ministry of Finance**.

Read more: **Directorate of Enforcement, Prevention of Money Laundering Act**.

Estonia Legalizes Same-Sex Marriage

Estonia's parliament **approved a law to legalize same-sex marriage**, becoming the first central European country to do so. This move sets Estonia apart from its neighbors in the region, **where same-sex marriage remains illegal**.

Marriage between same-sex couples is legally performed and recognised in 34 other countries. Of these 34, **23 legalised same sex couples to marry through legislation, while 10 through court decisions**. Netherlands was the **first ever nation to legalise same-sex marriage in the year 2001**.

The Indian legal system currently does not recognize **same-sex marriages**, and the country's laws define marriage as a union between a man and a woman. However, in November 2018, the **Supreme Court decriminalised homosexuality by striking off parts of Section 377 of the Indian Penal Code (IPC)**.

Read more: **Same-sex marriage**

Integrated Simulator Complex 'Dhruv'

Recently, India's Defense Minister, inaugurated the **Integrated Simulator Complex (ISC) 'Dhruv'** at the **Southern Naval Command** in Kochi. This cutting-edge facility is equipped with **state-of-the-art simulators developed indigenously** and is set to revolutionise practical training in the **Indian Navy**.

The simulators housed within the ISC 'Dhruv' will provide **real-time experiences in navigation, fleet operations, and naval tactics, greatly enhancing the training process**. Notably, these simulators will also be utilised to train personnel from friendly countries, **strengthening defence cooperation**.

Among the simulators showcased, the **Multi-Station Handling Simulator (MSSHS)**, **Air Direction and Helicopter Control Simulator (ADHCS)**, and **Astronavigation Dome** garnered attention. The **ship handling simulators**, exported to 18 countries, highlight India's prowess in simulator manufacturing, while the **Astronavigation Dome**, a first-of-its-kind in the Indian Navy, showcases the nation's innovative capabilities. Read more: **Indian Navy**

US Senate Proposes 'NATO Plus Five' Defence Status for India

Recently, in a significant move coinciding with Prime Minister of India's visit to Washington, the **co-chairs of the U.S. Senate** announced their plan to introduce legislation granting India **'NATO plus five'** defence status. This arrangement currently **includes the US, its NATO partners, and five countries: Australia, New Zealand, South Korea, Japan, and Israel**. Aims to enhance defence ties and **facilitate the transfer of defence equipment**. However, India's External Affairs Minister, S. Jaishankar, had already rejected this framework, stating that it did

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not apply to India. US defended the proposal, emphasizing the importance of increasing defence trade between the US and India to **bolster India's defence capabilities**, particularly in the face of the **China threat**. The goal is to establish a comprehensive partnership between the two nations.

Read more: **North Atlantic Treaty Organization (NATO)**

NHAI's Knowledge Sharing Platform for Highway Development

National Highways Authority of India (NHAI) has launched a 'Knowledge Sharing' platform on its website to facilitate the exchange of **knowledge and best practices** in areas such as **road design, construction, road safety, and environmental sustainability**. The platform allows **experts and citizens to share insights** and upload video clips, PowerPoint presentations, and PDF files, which will be reviewed by NHAI officials for potential implementation.

This initiative aims to foster the holistic **development of the National Highway infrastructure** by encouraging the adoption of innovative practices and sustainable approaches, including the innovative use of recycled materials such as **fly-ash** and **plastic waste**. NHAI is also encouraging the use of **Recycled Asphalt (RAP)** and **Recycled Aggregates (RA)** in the National Highway construction to promote sustainable and eco-friendly practices.

With the integration of modern infrastructure elements like tunnels, bridges, wildlife corridors, and expressways, the platform seeks to engage a wider audience and promote collective efforts toward the nation's highway development goals.

Read more: **National Highways Authority of India**

World Sickle Cell Day 2023

Recently, **World Sickle Cell Awareness Day**, observed on **19th June**, raises awareness about **sickle cell disease (SCD)** and its global impact.

The theme World Sickle Cell Awareness Day 2023 is 'Building and strengthening global sickle cell communities, formalizing newborn screening and knowing your sickle cell disease status'. The theme is about recognizing the

first step to **understanding the genotype in infants and adults in fighting sickle cell disease**. It also urges the utilization of advanced technology to identify SCD status.

SCD is a **chronic single-gene disorder** characterized by **chronic anemia, acute painful episodes, organ infarction, and chronic organ damage**, resulting in a significant **reduction in life expectancy**. Common symptoms include chronic anemia leading to **fatigue, weakness, and paleness, as well as painful episodes known as sickle cell crises** that cause intense pain in various parts of the body. **Delayed growth and puberty** can also occur.

Treatment options for SCD include **blood transfusions to relieve anemia** and reduce pain crises, the use of medication such as hydroxyurea to decrease the frequency of painful episodes and prevent long-term complications, and potentially bone marrow or stem cell transplantation.

What are Sickle Cell Disorders?

- A group of disorders that cause red blood cells to become misshapen and break down.
- The cells die early, leaving a short age of healthy red blood cells and can block blood flow causing pain.



Types:

Sickle Cell Anaemia

Dysfunctional red cells due to abnormal haemoglobin

Sickle Cell Crisis

Blockage of blood vessels causing severe pain or organ damage



Read more: **Sickle Cell Disease**

Indigenous mRNA-Based Omicron-Specific Booster Vaccine

The **Department of Biotechnology (DBT)** in India has achieved a significant milestone in the fight against Covid-19 with the approval of an **indigenous Omicron-specific mRNA-based booster vaccine** known as **GEMCOVAC®-OM**.

Developed by **Gennova Biopharmaceuticals Ltd** using an indigenous platform technology and supported by the

Note:



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Mission Covid Suraksha initiative implemented by the **Biotechnology Industry Research Assistance Council (BIRAC)**, the vaccine has received **Emergency Use Authorization (EUA)** from the **Drug Control General of India (DCGI)**.

GEMCOVAC®-OM stands out for its **thermostability**, **eliminating the need for ultra-cold chain infrastructure required by other approved mRNA-based vaccines**. This feature ensures easier deployment across India.

mRNA vaccines work by using mRNA, or messenger RNA, which is the molecule that essentially puts DNA instructions into action. Inside a cell, mRNA is used as a template to build a protein. These vaccines **teach cells how to make a protein that triggers an immune response** inside our bodies which then produces antibodies (what protects us from getting infected if the real virus enters our bodies).

Read more: **mRNA-based vaccine, Drug Control General of India**

'One Nation One Helpline' Initiative for Childline Services

The **Ministry of Women and Child Development (MoW&CD)** in India has undertaken a significant step by merging the successful **Childline emergency counselling and distress helpline for children with the Emergency Response Support System (ERSS) number 112**. The move aims to **enhance the effectiveness and efficiency of child helpline services** by integrating them with other emergency services such as the **police, fire, and ambulance departments**.

This decision is part of the **'One Nation One Helpline' initiative** introduced by the **MoW&CD**. Initially, the merger will be implemented in nine states and UTs, including **Andhra Pradesh, Arunachal Pradesh, Bihar, Gujarat, Goa, Mizoram, Ladakh, Puducherry, and Dadra and Nagar Haveli and Daman and Diu**, with other regions to follow in a phased manner.

Read more: **Emergency Response Support System, Childline India Foundation**.

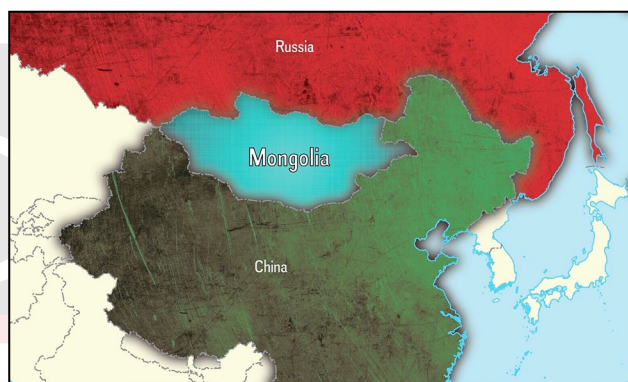
Ex Khaan Quest 2023

The multinational peacekeeping joint exercise called **"Ex Khaan Quest 2023"** has begun in **Mongolia** with the

participation of military contingents and observers from over 20 countries.

The 14-day exercise is aimed at enhancing the **interoperability of the participating nations**, sharing experience and training uniformed personnel for the **United Nations Peacekeeping Operations (UNPKO)**. The exercise will prepare participants for future **UN Peacekeeping missions**, develop peace operations capabilities and enhance military readiness.

Mongolia is in **Asia between Russia to the north and China to the south**. It has a **parliamentary form of government**. The capital of Mongolia is **Ulaanbaatar**. Languages that are spoken in Mongolia include **Khalkha Mongol (official), Turkic, and Russian**. The major mountain ranges are **Altai, Khangai and Khentii**. The major river is the **Orkhon**.



Read More: **Ex Khaan Quest, India-Mongolia Relations**

National Internet Exchange of India (NIXI)

The **National Internet Exchange of India (NIXI)** marks its **20th Foundation Day**, reaffirming its strong commitment to the **development of India's internet infrastructure**.

NIXI is a **not-for-profit organisation** (section 8 of the **Companies Act 2013**) working since 2003 for spreading the internet infrastructure to the citizens of India through services like **Internet Exchanges** through which the internet data is exchanged amongst **Internet Service Providers (ISP's), Data Centers and Content Delivery Network (CDNs), .IN Registry**, managing and operation of **.IN country code domain and .BHARAT IDN (Internationalized Domain Name) domain for India**, **Indian Registry for Internet Names and Numbers (IRINN)**, managing and operating Internet Protocol (IPv4/IPv6).

Note:



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Pv6 Expert Panel (IP Guru) is a group to extend support to all the Indian entities that are finding it technically challenging to migrate and adopt IPv6.

Read More: [National Internet Exchange of India \(NIXI\)](#)

DAKSHTA: Empowering Young Professionals in Government Administration

The recently launched curated collection, **DAKSHTA (Development of Attitude, Knowledge, Skill for Holistic Transformation in Administration) For Young Professionals**, on the **iGOT Karmayogi Platform** aims to equip young professionals and consultants in government with the necessary competencies to effectively discharge their duties and responsibilities.

Consisting of 18 courses, the collection covers a wide range of subjects crucial to their roles, including data-driven decision making, code of conduct, communication skills, public policy research, stress management, and more.

The **iGOT Karmayogi Platform**, an online portal established under the **Mission Karmayogi**, offers a comprehensive resource for capacity building, career management, and networking for government officials.

Read more: [iGOT Karmayogi Platform, Mission Karmayogi](#).

New Space India to Enhance Maritime Communication with MSS Terminals

NewSpace India Ltd (NSIL), the commercial arm of the **Indian Space Research Organisation (ISRO)**, has embarked on a project to improve communication with vessels at sea and enhance the monitoring of Indian waters.

The company plans to **install mobile satellite service (MSS) terminals** on approximately one lakh motorised and fishing boats across 13 coastal states. The MSS terminals will enable efficient monitoring, control, and surveillance of **marine fishing vessels**. The system will be powered by India's own navigation satellite system, **Navigation with Indian Constellation (NavIC)**.

This ambitious initiative aims to strengthen emergency **communication capabilities and asset tracking in the maritime domain**, fostering safer and more secure operations along India's coastline.

Read more: [Indian Space Research Organisation](#)

Dugdh Sankalan Sathi App

Recently, the **Indian dairy industry** witnessed a significant milestone with the unveiling of the "**Dugdh Sanakalan Sathi Mobile App**" by the Union Minister of **Heavy Industries**. This groundbreaking mobile application, developed by **Rajasthan Electronics & Instruments Limited (REIL)**, is poised to revolutionize the **milk collection process** and address key challenges faced by the industry. With a focus on improving milk quality, fostering transparency among stakeholders, and streamlining operations at the grassroots village level, including **Milk Cooperative Societies**, this app marks a significant step towards **digitization** in the dairy sector. The app also provides **real-time updates on milk prices from the cloud server**, eliminating human errors and ensuring transparency in payment calculations. Additionally, it facilitates **direct beneficiary transfers of milk payments and government subsidies** to the bank accounts of milk producers, promoting financial inclusion and empowerment.

Read more: [India's Dairy and Livestock Sector](#)

NTPC's Rooftop Solar Project Empowers IIT Jodhpur

NTPC Vidyut Vyapar Nigam Limited (NVVN), a wholly owned subsidiary of **National Thermal Power Corporation Limited (NTPC)**, has commissioned its **first Rooftop Solar Photovoltaic Project** at **IIT Jodhpur, Rajasthan**. The one MW Grid-connected Solar Project has been implemented by NVVN under the **RESCO model**, with a **Power Purchase Agreement duration of 25 years**.

NVVN Limited was formed by NTPC in the year 2002 to tap the potential of power trading in the country. **NVVN holds the highest Category 'I' power trading license** as per the latest regulation of **Central Electricity Regulatory Commission**.

NTPC Ltd. is a **central Public Sector Undertaking (PSU)** under the **Ministry of Power**. It is **India's largest energy conglomerate** with roots planted way back in 1975 to

Note:



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accelerate power development in India. It became a **Maharatna company** in **May 2010**. It is located in **New Delhi**.

Read more: **National Thermal Power Corporation Limited, India's Solar Power Dream**

The Right to Change One's Name

In recent rulings, the **High Courts of Allahabad and Delhi** emphasized the **right to change one's name** as an **integral part of the right to life under Article 21 of the Indian Constitution**. The Allahabad High Court stated that every citizen has the fundamental right to keep or change their name. The courts found that the **denial of name-change requests by the authorities violated the fundamental rights of the petitioners under Articles 19(1) (a), 21, and 14 of the Constitution**.

Similarly, the Delhi High Court, asserted that the **right to identity is an intrinsic part of the right to life under Article 21**. Both cases highlight the significance of personal identity and the recognition that individuals have the right to a name that reflects their self-worth and protects them from social stigmas.

While the **right to change one's name is considered a fundamental right**, it is not an absolute right and is **subject to reasonable restrictions**. The Allahabad High Court clarified that these restrictions must be fair, just, and reasonable.

Read more: **Article 21 of the Indian Constitution**

Common Annual Confidential Report (ACR) in Armed Forces

To foster **integration and jointness within the armed forces**, a common Annual Confidential Report (ACR) will be implemented, starting with senior officers.

This reform aims to establish **common parameters, procedures, and assessments**, leading to improved outcomes and enhanced uniformity in HR practices. The implementation of a **common ACR for two- and three-star officers** has been approved.

Currently, **selection for combined or tri-services appointments is based on parent service-specific parameters**, but recent cross-services postings have been initiated as a step towards achieving greater integration.

With the ongoing transformation towards **joint structures and organizations**, the employment of officers in tri-service appointments is expected to increase. Consequently, there is a need to **streamline the appraisal system to ensure effectiveness in undertaking tasks within these appointments**. The move towards a common ACR aligns with the **broader goal of establishing integrated theater commands** and reflects the commitment of the **Chief of Defence Staff (CDS)** to drive organizational reforms.

Read more: **Theaterisation-of-Armed-Forces, Chief of Defence Staff**.

International Energy Agency

International Energy Agency (IEA) to review all its full membership conditions for India's inclusion.

To become a member of the IEA, a **candidate country must be a member country of the OECD** and demonstrate several requirements. These include **having crude oil and/or product reserves equivalent to 90 days** of the previous year's net imports, to which the government **has immediate access and could be used to address disruptions to global oil supply**; a demand restraint program to **reduce national oil consumption by up to 10%**; legislation and organization to operate the Coordinated Emergency Response Measures (CERM) on a national basis; **legislation and measures to ensure that all oil companies** under its jurisdiction report information upon request; and measures in place to ensure the capability of contributing its share of an IEA collective action. India is not a member of IEA.

IEA is an **autonomous intergovernmental organization** established in 1974 in Paris, France. It **focuses on energy policies, including economic development, energy security, and environmental protection**. The IEA is **made up of 31 member countries**.

Read more: **IEA Invites India to be a Full-Time Member**

Kari Ishad Mango Receives GI Tag

Kari Ishad mango from Ankola taluk of Uttara Kannada, Karnataka has received the **Geographical Indication (GI) tag** from the Geographical Indications Registry under the Union Government. The GI certificate

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issued to Matha Totagars Farmer Producer Company Limited.

Recognized for its exceptional attributes, including a **distinctive aroma, delightful taste, generous pulp content, and desirable shape and size**, the Kari Ishad mango is celebrated as one of the finest mango varieties.

Read more: [Geographical Indication Tag](#)

Mayon Volcano

Recently, the **Mayon volcano** began expelling lava on June 11, 2023, night, forcing nearly 18,000 people to

flee to emergency shelters. Mayon Volcano is an **active volcano located in the southeastern part of Luzon, Philippines**, dominating the city of Legaspi.

It is known for its **picturesque conical shape** and is the most active of 24 known volcanoes in the Philippines. Mayon has erupted over 30 times since 1616, with its **most destructive eruption** occurring in 1814, **burying entire villages** and leaving more than **1,000 people dead**. The volcano is popular with climbers and campers and is the center of **Mayon Volcano National Park**.

Read more: [Semeru Volcano of Indonesia](#)

Julley Ladakh (Hello Ladakh)

The **Indian Navy** initiated the “**Julley Ladakh**” (**Hello Ladakh**), outreach program to foster awareness about the Navy and engage with the youth and civil society in Ladakh. This initiative, following the Navy’s successful efforts in the Northeast and coastal states, aims to achieve several objectives. Firstly, it seeks to celebrate the **75th anniversary of Indian Independence through the “Azadi ka Amrit Mahotsav.”** Secondly, it aims to **create awareness** about the career opportunities in the **Indian Navy**, including the **Agnipath Scheme**, among students and colleges in Ladakh. Moreover, the program endeavors to **motivate the youth to join the Indian Navy** and showcase **Nari Shakti** by involving women officers and spouses.



Read more: [Agnipath Scheme](#)

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Bio-Stimulants

The Ministry of Agriculture and Farmers Welfare, Government of India issues draft guidelines **for the registration of bio-stimulants**. It is mandatory for a person who wants to manufacture or import any bio-stimulant to list such bio-stimulant under Schedule VI of the Fertiliser (inorganic, organic or mixed) Control Amendment Order 2021, also called the FCO Amendment order.

Bio-stimulants are substances, microorganisms, or combinations thereof that **enhance the physiological processes in plants, leading to improved nutrient uptake, growth, yield**, nutrition efficiency, crop quality, and stress tolerance. They serve to stimulate plant processes without directly providing nutrients. Bio-stimulants are different from pesticides or plant growth regulators which fall under the Insecticides Act, 1968.

Some examples of bio-stimulants include **plant hormones, vitamins, enzymes, humic acid, sugars, sea kelp, fish emulsion, protein hydrolysates**, seaweed and plant extracts, chitosan and other biopolymers, inorganic compounds and beneficial microbes.

The key difference between bio-stimulants and fertilizers is the use and the mechanism of action, and the fact that living **microbes are involved in the bio-stimulants**. While bio-stimulants help to improve plant

growth and health, fertilizers are primarily used to replenish the soil with essential nutrients that plants need to grow.

Phosphorus on Saturn's Moon Enceladus

Scientists have discovered phosphorus, a key element for life, on **Saturn's moon Enceladus**. Previous studies had found minerals and organic compounds in Enceladus' ice grains but had not detected phosphorus until now. The discovery was based on a review of data collected by **NASA's Cassini spacecraft** during its 13-year exploration of the giant planet, its rings and its moons from 2004 to 2017.

Phosphorus is a fundamental unit of the structure of **DNA and RNA** and is a vital part of cell membranes and energy-carrying molecules existing in all forms of life on Earth. This new discovery makes Enceladus a potential option as a habitable place in the solar system beyond Earth, if only to microbes.

Over the past 25 years, scientists have discovered **habitable places with oceans beneath a surface layer of ice in the solar system, including Jupiter's moon Europa, Saturn's largest moon Titan**.



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Key Points

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Summary

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