Current Affairs
(CONSOLIDATION)

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(PART – I)

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Polity and Governance

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Derecognition and Deregistration of Political Parties

Why in News?

Recently, a state party asked the **Election Commission of India (ECI)** not to derecognise the party in Andhra Pradesh.

What does Derecognition of Political Parties mean?

➢ **About:**
  ❍ Derecognition refers to the withdrawal of recognition of a political party by the ECI.
  ❍ Such parties are simply declared as **registered-unrecognized parties.**
  ❍ The **ECI has the power to derecognize a political party** if it violates the provisions of the Indian Constitution or the **Representation of the People Act, 1951.**

➢ **Grounds for Derecognition of a Political Party as National party (as per ECI):**
  ❍ If the party fails to secure at least 6% of the total votes polled in the general election to the LS or the legislative assembly of the state concerned, and if it fails to have at **least 4 MPs elected in the**

last LS polls (also, it doesn't win 1 seat in the LS from the same state.); or
  ❍ If it has **won at least 2% of the total seats in the LS** from at least 3 states.
  ❍ If it fails to secure **8% of the total valid votes** polled in the state at a General **Election to the LS from the state or to the State LA.**
  ❍ If the party fails to submit its audited accounts to the ECI on time.
  ❍ If the party fails to hold its organizational elections on time.

How does Derecognition of Parties differ from Deregistration?

➢ **About:**
  ❍ Deregistration refers to the cancellation of the registration of a political party. However, the ECI is **not empowered to de-register parties.**
  ❍ Once a political party is deregistered, it cannot contest elections.

➢ **Grounds for Deregistration of a Political Party:**
  ❍ A party can only be de-registered if:
  ❍ Its registration was obtained by fraud;
  ❍ It is declared illegal by the Central Government; or
  ❍ A party amends its internal Constitution and notifies the ECI that it can no longer abide by the Indian Constitution.

Note:

What is the Representation of People Act 1951?

➢ **About:**
  ○ It regulates the actual conduct of elections and by-elections, provides administrative machinery for conducting elections, deals with the registration of political parties, specifies the qualifications and disqualifications for membership of the Houses, provides provisions to curb corrupt practices and other offences.

➢ **RPA and Political Parties:**
  ○ Every association or body in order to become a political party must be registered with the ECI whose decision regarding registration will be final.
  ○ The current rulebook allows EC to register parties but **does not allow for deregistration.**
  ○ **No provision in the RPA 1951 provides any mechanism for de-registration** of a political party.
  ○ The Parliament may have deliberately omitted vesting the ECI with this power to **ensure its independence and unbiasedness in terms of organising free and fair elections.**
  ○ The ECI, however, has been demanding the power to regulate both registration and deregistration of political parties.

Stand-Up India Scheme

Why in News?

Recently, the Prime Minister of India has acknowledged the role that the **Stand-Up India** initiative has **played in empowering the SC/ ST communities and ensuring women empowerment.**

What are the Key Details of the Stand-Up India Scheme?

➢ **About:**
  ○ Stand up India Scheme was **launched by Ministry of Finance on 5th April 2016** to promote entrepreneurship at grassroot level focusing on economic empowerment and job creation.
  ○ This scheme has been extended up to the year 2025.

➢ **Purpose:**
  ○ **Promote entrepreneurshi**p amongst **women, Scheduled Caste (SC) and Scheduled Tribe (ST) category**.
  ○ Provide loans fo**r greenfield enterprises** in manufacturing, services or the trading sector and activities allied to agriculture.
  ○ Facilitate bank loans between **Rs.10 lakh and Rs.100 lakh** to **at least one SC/ST** borrower and at least **one-woman b**orrower per bank branch of Scheduled Commercial Banks.

➢ **Facilitates Bank Loans:**
  ○ The scheme aims to encourage all bank branches in extending loans. The desiring applicants can apply under the scheme:
    ● Directly at the branch or,
    ● Through Stand-Up India Portal **(www. standupmitra.in)** or,
    ● Through the Lead District Manager (LDM).

➢ **Eligibility for a Loan:**
  ○ **SC/ST** and/or **women entrepreneurs,** above **18 years** of age.
  ○ Loans under the scheme are available for **only green field projects**. Green field signifies, in this context, the first-time venture of the beneficiary in manufacturing, services or the trading sector and activities allied to agriculture.
  ○ In case of non-individual enterprises, **51% of the shareholding** and controlling stake should be held by either SC/ST and/or Women Entrepreneur.
  ○ Borrowers should **not be in default** to any bank/ financial institution.
  ○ The Scheme envisages '**up to 15%'** margin money which can be provided in convergence with eligible Central/State schemes.
    ● In any case, the borrower shall be required to bring in a **minimum of 10 %** of the project cost as own contribution.

➢ **Achievements:**
  ○ **Rs.40,710 crore** has been sanctioned under Stand-Up India Scheme to **180,636 accounts** in the last **7 years.**
    ● **More than 80% of loans** given under this scheme have been provided **to women.**

Note:

Stand-Up India Ecosystem
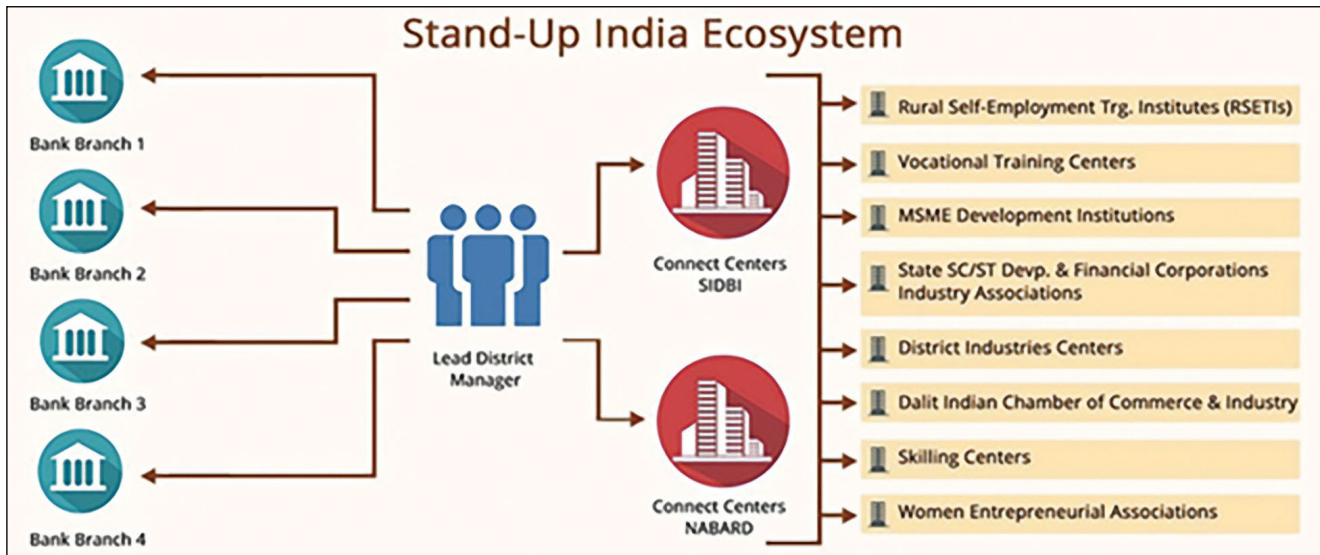
Preventive Detention

Why in News?

Recently, the **Supreme Court (SC) of India** observed that **preventive detention laws** in India are a colonial legacy that confers arbitrary power to the state.

➢ The Court warned that these laws are extremely powerful and have the potential to provide the state with free discretion.

What are the Implications of the SC's Judgment on Preventive Detention Laws?

➢ The Supreme Court's judgment is a significant development in the protection of civil liberties in India. The Court's warning about the arbitrary power conferred on the state through preventive detention laws **emphasizes the importance of ensuring checks and balances** on government power.

➢ The judgment's emphasis on **analyzing cases with extreme caution** and excruciating detail sets a high standard for the government to follow every procedure of law while exercising preventive detention powers against individuals.

➢ The Supreme Court's judgment underscores the **importance of protecting individual and civil liberties while balancing the need to maintain public order and national security.**

➢ The judgment highlights the importance of judicial oversight and review to ensure that **preventive detention laws are not misused to suppress dissent or violate individual rights.**

➢ The Court's emphasis on protecting civil liberties is a significant development in **safeguarding fundamental rights** and **ensuring the rule of law in India.**

What is Preventive Detention?

➢ **About:**

○ Preventive detention means **detention of a person without trial and conviction by a court**. Its purpose is not to punish a person for a past offence but **to prevent him from committing an offence in the near future.**

○ The detention of a person **cannot exceed three months unless an advisory board reports sufficient** cause for extended detention.

➢ **Protection:**

○ **Article 22 grants protection** to persons who are arrested or detained.

● Article 22 has two parts—**the first part deals with the cases of ordinary law** and the **second part deals with the cases of preventive detention law.**

➢ **Two Types of Detentions:**

○ **Preventive detention** is when a **person is held in police custody only on the basis of a suspicion** that they would conduct a criminal act or cause harm to society.

● The police have the authority to hold anyone they suspect of committing a criminal offence

Note:

and also to **make arrests without a warrant or a magistrate's authorization in certain cases.**

○ **Punitive detention,** which means detention as a punishment for a criminal offence. It occurs after an **offence is actually committed, or an attempt has been made towards the commission of that crime.**

Ranganath Report and Quota for Dalit Converts

Why in News?

Recently, the **Supreme Court** revisited a **2007 report by the Justice Ranganath Mishra Commission for Religious and Linguistic Minorities**, which recommended **Scheduled Caste (SC) reservation** for Dalit converts to Christianity and Islam.

➤ The Centre had **discredited the report,** but the apex court believes it contains valuable information that could help determine if excluding Dalit converts from the SC category is unconstitutional **according to the Constitution Order of 1950.**

> ### *Note:*
> ➤ Rejecting the Mishra report, the government had recently constituted a new Commission headed by a **former CJI K.G. Balakrishnan,** giving it two years to prepare a report on the question of granting SC status to **"new persons who have historically belonged** to the **Scheduled Castes but have converted to religions other than Hinduism, Buddhism and Sikhism".**
> ➤ For rejecting the report, the Centre has argued that "Dalits who converted to Christianity or Islam to overcome the burdens of caste cannot **claim reservation benefits** enjoyed by those who chose to stay back in the Hindu religious system".

What are the Key Highlights of the Ranganath Report?

➤ The recommendation of Scheduled Caste reservation for Dalit converts to Christianity and Islam was made in the 2007 report of the Justice Ranganath Mishra Commission for Religious and Linguistic Minorities.

➤ Dalit Christians and Muslims **face discrimination not only from upper-caste members** of their own religion but also from the **broader Hindu-dominated society.**

➤ The exclusion of Dalit converts to Christianity and Islam from the SC category **violates the constitutional guarantee of equality and is against the basic tenets of these religions, which reject caste discrimination.**

➤ The **denial of SC status to Dalit converts** to Christianity and Islam has **led to their socio-economic and educational backwardness** and has deprived them of **access to reservations in education and employment opportunities** (as provided under **article 16**).

Who is Included in the Constitution Order of 1950?

➤ When enacted, the **Constitution (Scheduled Castes) Order of 1950,** initially provided for recognizing **only Hindus as SCs**, to address the social disability arising out of the practice of untouchability.

➤ The Order was amended in 1956 to include **Dalits who had converted to Sikhism** and once more in 1990 to include **Dalits who had converted to Buddhism.**

○ Both amendments were aided by the reports of the **Kaka Kalelkar Commission in 1955** and the High-Powered Panel (HPP) on Minorities, Scheduled Castes, and Scheduled Tribes in 1983 respectively.

➤ The 1**950 Order** (**post amendments** in 1956 and 1990), mandates that **anybody who is not a Hindu, Sikh or Buddhist cannot be granted SC status.**

Why are Dalit Christians and Muslims Excluded?

➤ **Avoid Surge in SC Population:** The Office of the **Registrar General of India (RGI)** had cautioned the government that SC status is meant for communities **suffering from social disabilities arising out of the practice of untouchability, which it noted was prevalent in Hindu and Sikh** communities.

○ It also noted that such a move would significantly swell the population of SCs across the country.

➤ **Diverse Ethnic Groups who Converted:** In 2001, RGI stated that Dalits who converted to Islam or Christianity are not a single ethnic group as they belong to different caste groups.

○ Therefore, they cannot be included in the **list of Scheduled Castes (SC) as per Clause (2) of Article 341, which requires a single ethnic group for inclusion.**

➤ **Untouchability not Prelavent in Other Religions:** The RGI further opined that since the practice of

"untouchability" was a feature of the Hindu religion and its branches, allowing the inclusion of Dalit Muslims and Dalit Christians as SCs could **result in being "misunderstood internationally"** as India trying to "**impose its caste system"** upon Christians and Muslims.

❍ The 2001 note also stated that **Christians and Muslims of Dalit origin had lost their caste identity by way of their conversion** and that in their new religious community, the practice of untouchability is not prevalent.

> ### What is the Registrar General of India?
>
> ➢ The **Registrar General of India was founded in 1961** by the Government of India under the **Ministry of Home Affairs.**
>   ❍ It arranges, conducts, and **analyses the results of the demographic surveys** of India including the **Census of India** and **Linguistic Survey of India**.
> ➢ The **position of Registrar is usually held by a civil servant** holding the rank of **Joint Secretary.**

Agnipath Scheme and Doctrine of Promissory Estoppel

Why in News?

The **Supreme Court** has recently dismissed petitions challenging the **Delhi HC's judgement that upheld the Agnipath scheme for recruitment** to the armed forces.

➢ An argument on **Doctrine of Promissory Estoppel** was floated in the Supreme Court related to petitions of shortlisted candidates in the earlier recruitment process to Army and Air Force **which was cancelled when Agnipath scheme was notified.**

What is the Doctrine of Promissory Estoppel?

➢ **About**:
  ❍ Promissory estoppel is a concept developed in **contractual laws**. It **prevents a "promisor" from backing out of an agreement** on the grounds that there is no "**consideration."**
  ❍ The doctrine is invoked in court by a plaintiff **(the party moving court in a civil action) against the defendant** to ensure the execution of a contract

or seek compensation for failure to perform the contract.

➢ **Related Case:**
  ❍ In the *Chhaganlal Keshavalal Mehta v. Patel Narandas Haribhai (1981)* case, the **Supreme Court** listed out a checklist for when the doctrine can be applied.
    ● Firstly, there must be a **clear and unambiguous promise.**
    ● Secondly, the plaintiff must have **acted relying reasonably on that promise.**
    ● Thirdly, the **plaintiff must have suffered a loss.**

➢ **Current Stance of SC over Agnipath Petition:**
  ❍ The Supreme Court pointed out that **"promissory estoppel is always subject to overarching public interest".**
    ● It also added that "**this is not a contract matter where promissory estoppel in public law was applied, it is a public employment**" and that "the question of applying this principle will not arise in this case".

What is the Agnipath Scheme?

➢ **About:**
  ❍ It allows **patriotic and motivated youth to serve in the Armed Forces** for a period of **four years.**
    ● The **youth joining the army will be called Agniveer**.
  ❍ Under the new scheme**, around 45,000 to 50,000 soldiers will be recruited annually**.
    ● However, after four years, **only 25% of the batch will be recruited back into their respective services**, for a period of 15 years.

➢ **Objectives:**
  ❍ It is expected to bring down the **average age profile of the Indian Armed Forces by about 4 to 5 years.**
    ● The scheme envisions that the **average age in the forces is 32 years today, which will go down to 26 in six to seven years.**

➢ **Eligibility Criteria:**
  ❍ It is only for **personnel below officer ranks** (those who do not join the forces as commissioned officers).
    ● **Commissioned officers** are the army's highest ranked officers. They hold an **exclusive rank in the Indian armed forces**. They often hold a

commission under the **president's sovereign power** and are officially instructed to protect the country.

○ Aspirants between the ages of **17.5 years and 23 years** will be eligible to apply.

➢ **Benefits for Agniveers:**

○ Upon the completion of the 4-years of service, a **one-time 'Seva Nidhi' package of Rs 11.71 lakhs** will be paid to the Agniveers that will include their **accrued interest thereon.**

● They will also get a **Rs 48 lakh life insurance cover for the four years.**

○ In case of death, the payout will be over **Rs 1 crore,** including pay for the unserved tenure.

● The government will help rehabilitate soldiers who leave the services after four years. **They will be provided with skill certificates and bridge courses.**

National Credit Framework

Why in News?

The **University Grants Commission** has announced the **implementation of the National Credit Framework (NCrF)** for all **regulatory organisations and universities in India.**

➢ This framework is designed to **integrate the credits earned through school education, higher education, vocational, and skill education,** and provide lifelong learning opportunities.

What is National Credit Framework?

➢ **About:**

○ According to the framework, a**n academic year will be defined by the number of hours a student puts in** and **credits will be provided to them accordingly at the end of each academic year.**

○ NCrF is a **meta-framework** that consists of three verticals:

● **National School Education Qualification Framework (NSEQF)**

● **National Higher Education Qualification Framework (NHEQF)**, and

● **National Skills Qualification Framework (NSQF).**

➢ **Provisions:**

○ Integration of Academic and Vocational Education:

● The integration of academic and vocational education is emphasised by the **National Education Policy (NEP)** and is provided by the NCrF.

● This mechanism ensures **equivalence between the two education streams.**

○ **Credit System:**

● The total '**Notional Learning hours in a year**' for assignment of Credits will be **1200 hours.** A minimum of **40 credits may be earned for 1200 hours** of learning every year with **20 credits per semester of six months**

■ **Notional hours** refer to the time that the average student would need to attend all classes, study for tests and do assignments and homework.

● The total credits earned by a student during the entire schooling period will be **160 credits.**

● By the end of a three-year bachelor's degree course, the student will have earned **120 credits.**

● When a student completes a Ph.D., the earned credits would be **320.**

● Students will also get credits for participating in Olympiads, science quizzes, internships, and **taking up jobs while they are studying in college.**

➢ **Credit Levels:**

○ The NCrF has proposed several levels within this framework ranging from **level 1 to level 8.**

● The credit level that can be attained after completion of school education, i.e., **grade 5th will be level 1,** grade 8th will be level 2, grade 10th will be level 3, and grade 12th will be level 4.

● **Higher education** shall be from credit levels **of 4.5 to level 8.**

● **The NCrF credit levels for school education are upto level 4, while for higher education**

● For vocational education & training level 1 to level 8.

➢ **Aadhaar-Enabled Student Registration:**

○ An Aadhaar-enabled student registration will take place. After student registration, an **Academic Bank of Credit (ABC)** account will be opened.

Note:

○ The **deposit of degree and credits will take place in those accounts**. There will be a knowledge locker along the lines of DigiLocker.

➢ **Challenges:**

○ **Standardisation:** The NCrF consists of different verticals such as **NSEQF, NHEQF, and NSQF.** Ensuring standardisation across these verticals while **catering to the unique needs of each stream might be a challenge.**

○ **Data Security and Privacy:** The use of **Aadhaar-enabled student registration** and an academic bank of credit (ABC) account to **store student data may pose security and privacy risks.**

● Ensuring the **security and confidentiality of the data** will be crucial for the successful implementation of the NCrF.

Conclusion

NCrF aims to provide **seamless horizontal and vertical mobility between different education streams in India**. However, the successful implementation of the NCrF may face several challenges such as **implementation, standardisation, acceptance and adoption**. Addressing these challenges will require a collaborative effort from various stakeholders to ensure that the framework is **up-to-date, relevant, and effective in addressing the changing needs of the education system in India.**

Pre-draft National Curriculum Framework for School Education

Why in News?

Recently, the Ministry of Education released a pre-draft version of the **National Curriculum Framework** for School Education and has sought feedback from diverse stakeholders.

➢ The pre-draft was formulated by a **committee led by K Kasturirangan**, a former head of the **Indian Space Research Organization (ISRO).**

What is the National Curriculum Framework?

➢ **About:**

○ **NCF is one of the key components of the New Education Policy(NEP) 2020,** that enables and energizes this transformation, informed by the aims, principles, and approach of NEP 2020.

○ The NCF has undergone four revisions in the past - in 1**975, 1988, 2000, and 2005.** The **proposed revision, if implemented, would be the fifth iteration** of the framework.

➢ **Four Sections of NCF:**

○ **NCF for School Education**

○ **NCF for Early Childhood Care and Education (Foundational Stage)**

○ **NCF for Teacher Education**

○ **NCF for Adult Education**

➢ **Objective:**

○ It aims to help in positively transforming the school education system of India as envisioned in NEP 2020, through corresponding positive changes in the curriculum including pedagogy.

○ It aims to realize the highest quality education for all children, consistent with realizing an equitable, inclusive, and plural society as envisaged by the Constitution of India.

What is NCF for School Education?

➢ **About:**

○ The **National Curriculum Framework for School Education (NCF-SE) is developed based on the vision of the NEP 2020, and to enable its implementation.**

○ The **formulation of NCF-SE will be undertaken by the NCERT.** The NCFSE document shall henceforth be revisited and updated once every 5-10 years, considering the frontline curriculum.

➢ **Objectives:**

○ The **NCFSE serves as a guideline for developing syllabi, textbooks, and teaching practices in India**.

○ Its objectives include **shifting from rote (memorization by repetition) learning, connecting education to real-life situations,** making examinations more flexible, and enriching the curriculum beyond textbooks.

○ The NCFSE also aims to make **learning enjoyable, child-centered, and self-reliant, and promote democratic values.** It provides guidelines for counseling secondary school students and is mandated for all age groups.

Note:

What is the Pre-draft National Curriculum Framework for School Education?

➢ **About:**
  ○ The document covers the curriculum **framework for children aged 3 to 18 years** and seeks feedback from students, parents, teachers, educators, experts, scholars, and professionals.

➢ **Key Features:**
  ○ **Learning via 6 Pramana's:**
    ● **Pratyaksa,** interpreted as **perception through five senses**;
    ● **Anumana,** which uses **inferences to come to new conclusions;**
    ● **Upamana,** which is knowing through **analogy and comparison**;
    ● **Arthapatti,** which involves knowing through **circumstantial implication,**
    ● **Anupalabdhi,** which includes **perception of non-existence,**
    ● **Sabda,** which is "something an individual can only **directly know a fraction of all reality.**

➢ **Panchakosha Vikas for Moral Development:**
  ○ Indian education system emphasizes a holistic approach that fosters **moral development, cultural understanding, and social awareness** among children.
  ○ This is achieved through a five-fold development approach that includes traditional practices like yoga, a balanced diet, and cultural activities.

➢ **Teachings from Indian History:**
  ○ Education in India **encourages questioning and debates to stimulate critical thinking and open-mindedness**, as exemplified by the Upanishads.
  ○ Additionally, Indian history education identifies and explains important phases of the **Indian national movement against British rule**, with **special reference to the Gandhian and subaltern movements**, to promote **national identity and social justice.**
  ○ Teaching the concepts of different religious and philosophical traditions, including **Buddhism, Jainism**, and **Vedic** philosophies, to promote cultural diversity and interfaith understanding.

➢ **No Exams till Class 2:**
  ○ It proposes that explicit tests and exams are not suitable assessment tools for children in classes up to 2 and recommends introducing written tests only from class 3 onwards to avoid imposing additional burden on the child.

➢ **Curriculum for Secondary Stage:**
  ○ For **Grade 10 certification, students will have to take two essential courses from humanities, maths and computing, vocational education, physical education, arts education, social science, science, and interdisciplinary areas.**
  ○ In **Grades 11 and 12, students will be offered choice-based courses in the same disciplines for more rigorous engagement**.
    ● This phase of the **Secondary Stage would be divided into semesters** and each choice-based course would be for a semester.
    ● **Students must complete 16 choice-based courses to complete Grade 12.**
  ○ **Modular Board Exams** will be offered **as opposed to a single exam** at the end of the year, and the result will be based on the cumulative result of each exam.

➢ **Arts and Interdisciplinary Areas:**
  ○ Arts education will include music, dance, theatre, sculpture, painting, set design, and scriptwriting, while interdisciplinary areas will include knowledge of India, traditions, and practices of Indian knowledge systems.

➢ **Significance:**
  ○ The National Curriculum Framework for School Education is significant because it provides a roadmap for the education of children in India, which includes **multiple educative approaches and learning-teaching material for different stages of school education.**
  ○ The framework emphasizes the importance of including values and their **"rootedness"** in India, including content, language learning, academic approaches, philosophical basis, aims, and epistemic approach.

What are the Other Government Initiatives Related to Educational Reforms?

➢ **National Programme on Technology Enhanced Learning.**
➢ **Sarva Shiksha Abhiyan**
➢ **PRAGYATA**

Note:

➢ **Mid Day Meal Scheme**
➢ **Beti Bachao Beti Padhao**
➢ **PM SHRI Schools**

What is the National Education Policy 2020?

➢ **About:**
  ○ The NEP 2020 is a **comprehensive framework for education reform** in India that was approved in 2020, aiming to bring **significant changes in the education system of India** by providing a holistic and multidisciplinary approach to education.

➢ **Features of the NEP 2020:**
  ○ Universalization of education from preschool to secondary level.
  ○ Introduction of a **new pedagogical and curricular structure** based on cognitive and socio-emotional development of students.
  ○ Emphasis on the development of **foundational literacy and numeracy** skills in primary education.
  ○ Increased focus on research and development in education.

Transforming Curricular & Pedagogical Structure
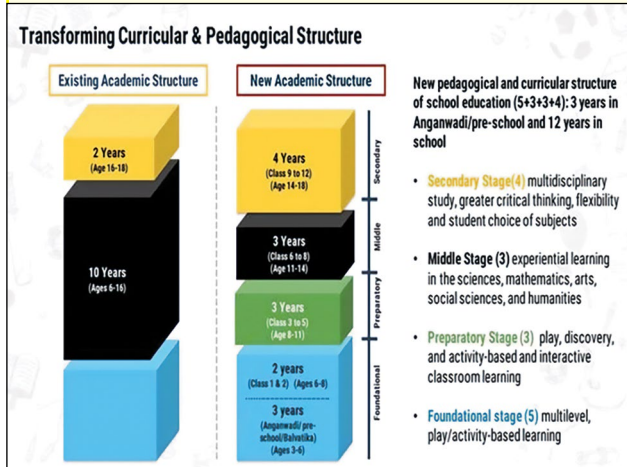
Role of Parliamentary Committees in Indian Democracy

Why in News?

Parliamentary committees are constituted to delve deeper into matters of public concern and develop expert opinions.

What are Parliamentary Committees?

➢ **Evolution of Committees:**
  ○ The **structured committee system was established in 1993,** but individual committees have been formed since independence.
  ○ For instance, five of the many crucial committees of the Constituent Assembly are
    ● The **Ad Hoc Committee on the Citizenship Clause** was formed to discuss the nature and scope of Indian citizenship.
    ● The **Northeast Frontier (Assam) Tribal and Excluded Areas Sub-Committee** and **the Excluded and Partially Excluded Areas (Other than Assam) Sub-Committee** were significant committees during independence.
    ● The **Expert Committee on Financial Provisions of the Union Constitution** and **the Advisory Committee on the Subject of Political Safeguards for Minorities** were formed to give recommendations on taxation and abolition of reservations for religious minorities, respectively.

➢ **About:**
  ○ A parliamentary committee means a committee that:
    ● Is appointed or elected by the House or nominated by the Speaker/Chairman.
    ● Works under the direction of the Speaker / Chairman.
    ● Presents its report to the House or to the Speaker /Chairman.
    ● Has a secretariat provided by the Lok Sabha / Rajya Sabha.
  ○ The consultative committees, which also consist of members of Parliament, are not parliamentary committees as they do not fulfill the above four conditions.

➢ **Types:**
  ○ **Standing Committees: Permanent** (constituted every year or periodically) and work on a continuous basis.
    ● Standing Committees can be classified into the following **six categories:**
      ■ Financial Committees
      ■ Departmental Standing Committees
      ■ Committees to Enquire
      ■ Committees to Scrutinise and Control

Note:

■ Committees Relating to the Day-to-Day Business of the House
■ House-Keeping Committees or Service Committees

➢ **Ad Hoc Committees:**
  ○ **Temporary** and cease to exist on completion of the task assigned to them. E.g. **Joint Parliamentary Committee**.

➢ Constitutional Provisions:
  ○ Parliamentary committees draw their authority from **Article 105 (on privileges of Parliament members)** and **Article 118 (on Parliament's authority to make rules for regulating its procedure and conduct of business)**.

What is the Role of Parliamentary Committees?

➢ **Provides Legislative Expertise:**
  ○ Most MPs are not subject matter experts on the topics being discussed. Parliamentary committees are meant to help MPs seek expertise and give them time to think about issues in detail.

➢ **Acting as a Mini-Parliament:**
  ○ These committees act as a mini parliament, as they have MPs representing different parties are elected into them through a system of the single transferable vote, in roughly the same proportion as their strength in Parliament.

➢ **Instrument for Detailed Scrutiny:**
  ○ When bills are referred to these committees, they are examined closely and inputs are sought from various external stakeholders, including the public.

➢ **Provides a Check on the Government:**
  ○ Although **committee recommendations are not binding on the government, their reports create a public record of the consultations t**hat took place and put pressure on the government to reconsider its stand on debatable provisions.
  ○ By virtue of being closed-door and away from the public eye, discussions in committee meetings are also more collaborative, with MPs feeling less pressured to posture for media galleries.

How has the Role of Parliamentary Committees Declined Recently?

➢ During the course of the **17th Lok Sabha**, only **14 Bills have been referred** for further examination so far.

➢ As per data from PRS, as little as **25% of the Bills introduced were referred** to committees in the **16th Lok Sabha**, as compared to 71% and 60% in the 15th and 14th Lok Sabha, respectively.

Public Interest Immunity Claims Proceeding

Why in News?

Recently, the **Supreme Court of India** ruled on the use of **sealed cover proceedings** in courts and the telecast ban of a Malayalam channel.

➢ The Court criticised the **government for silencing voices in the media and reducing constitutional rights** and procedural guarantees of a fair hearing.

➢ The Court also devised an **alternative procedure for Public Interest Immunity claims proceedings** to replace the use of sealed covers.

What are Sealed Cover Proceedings?

➢ The **sealed cover proceedings** are often used in cases **involving sensitive or confidential information,** such as national security matters, or cases where the disclosure of the evidence may compromise the **privacy of individuals involved.**

➢ In such cases, the documents or evidence are submitted to the court in a sealed cover, and only the **judge and a designated court officer are allowed to examine the contents of the sealed envelope**.
  ○ The **parties to the case may not have access to the contents** of the sealed cover, and the **court may only rely on the information contained in the sealed cover to make its decision.**

➢ Sealed cover proceedings are a **means of balancing the need for transparency in the judicial process** with the need to **protect sensitive information or individuals' privacy.**
  ○ However, the use of **sealed covers has reduced constitutional rights** and procedural guarantees of a fair hearing under the law.

What is Public Interest Immunity Claims Proceeding?

➢ **About:**
  ○ The **Supreme Court** evolved the **"less restrictive" Public Interest Immunity (PII)** claims proceedings

as an **"alternative" to the sealed cover proceedings** while dealing with state requests for confidentiality.

❍ The **PII proceedings would be a "closed sitting,"** but a **reasoned order allowing or dismissing the PII claim** of the state should be **pronounced in open court.**

➤ **Procedure – Role of Amicus Curiae:**

❍ The court will appoint an *amicus curiae*, which means **"friend of the court"**, to act as a **bridge between the parties involved in public interest immunity claims.**

● The **court-appointed amicus will be given access to the materials sought to be withheld by the state and allowed to interact with the applicant** and their lawyer before the proceedings to ascertain their case.

❍ The amicus curiae **will not interact with the applicant or their counsel after the public interest immunity proceeding has begun** and the counsel has viewed the document sought to be withheld.

❍ The **amicus "shall to the best of their ability represent the interests of the applicant"** and would be **bound by oath to not disclose or discuss the material with any other person.**

➤ **Drawback:**

❍ Since, **Article 145 of the Constitution** specifically mandates that all judgments of the Supreme Court be delivered in open court, **closed sitting proceedings as per PII might fall against this constitutional mandate.**

● **SC's Response:** While the **court recognised that public interest immunity proceedings will take place in a closed setting**, it stated clearly that the **court is required to pass a reasoned order for allowing or dismissing the claim in open court.**

● Additionally, while PII claims also impact the principles of natural justice, sealed cover proceedings go a step ahead and infringe on the principles of natural justice as well as the principles of open justice.

What are SC's Previous Observations over Sealed Cover Proceedings?

➤ **P. Gopalakrishnan vs The State of Kerala case (2019):**

❍ Th**e SC held that disclosure of documents to the accused is constitutionally mandated,** even if the investigation is ongoing and documents may lead to a breakthrough in the investigation.

➤ **INX Media case (2019):**

❍ The Supreme Court had criticised the Delhi High Court for basing its decision to deny bail to a former Union Minister **on documents submitted by the Enforcement Directorate (ED) in a sealed cover.**

● It held the **action as against the concept of fair trial.**

➤ **Cdr Amit Kumar Sharma v Union of India case (2022):**

❍ The SC said, "the **non-disclosure of relevant material to the affected party and its disclosure in a sealed cover to the adjudicating authority... sets a dangerous precedent.**

Mission to Map Rural India's Cultural Assets

Why in News?

In a bid to harness the unique cultural heritage of rural India, the government has identified and documented distinctive features of more than one lakh villages across the country**.**

➤ The entire exercise has been **carried out under the 'Mera Gaon Meri Dharohar'** (My Village My Heritage) programme of the **National Mission for Cultural Mapping (NMCM).**

What is the Mera Gaon Meri Dharohar Programme?

➤ **About Cultural Mapping:**

❍ The process **involves identification and mapping** the cultural **assets and art repositories** of the nation i.e., **art expressions, crafts and skills**, **wisdom tradition** and other cultural practices whether **oral, aural, visual or kinetic.**

❍ Information about the **ritual, social and economic status** of **artists** and **craftsmen** within the community is also of relevance and is to be noted during the cultural mapping.

Note:

➢ **Categories of Villages:**
- ❍ Villages have been categorized into **seven to eight categories** based on **ecological, developmental, and historical significance**, as well as **cultural aspects** such as famous textiles or products or connected to some historical or mythological events such as the Independence struggle or epics like the Mahabharata.

➢ **Ecological Category:**
- ❍ **Bishnoi village** in Rajasthan is a case study for living in **harmony with nature.**
- ❍ **Raini village**, which is famous for the **Chipko movement.**

➢ **Developmental Importance:**
- ❍ **Modhera** in Gujarat is the **first solar-powered village** in India.

➢ **Historical Villages:**
- ❍ **Kandel** in Madhya Pradesh, the site of the famous "**Jal Satyagraha**".
- ❍ **Hanol** in Uttarakhand and **Vidurashwathar** of Karnataka, which are linked to the **Mahabharata**.
- ❍ **Suketi** in Himachal Pradesh, **Asia's oldest fossil park**.
- ❍ **Pandrethan in Kashmir**, the village of Shaivite mystic Lal Ded

➢ **Survey Process:**
- ❍ The cultural asset mapping of villages was **carried out through field survey**s by joint teams of the Ministry of Culture and the **Common Services Centres (CSC), Ministry of Electronics and Information Technology**.
- ❍ Citizens were involved in sharing what makes their village, block, or district unique.
- ❍ The survey process involved a CSC **Village Level Entrepreneur (VLE)** conducting meetings with locals and uploading interesting facts about their village on a special application.

➢ **Future Plans:**
- ❍ The Indira Gandhi National Centre for Arts plans to cover all 6.5 lakh villages in the country and **create special films on 6,500 village** clusters showcasing their unique heritage.
  - ● **Short films** have been made on **750 cluster villages** using drones.
- ❍ The detailed dossiers on these villages, as well as the films, will be made available on a **web portal** called "**The National Cultural Work Place**".

- ❍ The web portal will contain a **virtual living museum** of all villages documented and a facility for uploading a village through crowd-sourcing and allowing villagers to edit and upload village data themselves.

What is National Mission for Cultural Mapping?
➢ The NMCM was launched by the Ministry of Culture in 2017 to develop a comprehensive database of art forms, artists, and other resources across the country.
➢ The programme got off to a slow start and was handed over to the Indira Gandhi National Centre for Arts (IGNCA) in 2021.
➢ The budget approved for the mission was ₹469 crore for a period of three years.

Forest (Conservation) Amendment Bill, 2023

Why in News?

Recently, the government introduced **the Forest (Conservation) Amendment Bill, 2023** in Lok Sabha and proposed changes to **the Forest (Conservation) Act, (FC) 1980.**

➢ The aim of the proposed changes is to build forest carbon stock by **raising plantations.** The Bill also seeks to make **land available for compensatory afforestation.**

What is the Background and Proposed Changes in FC Act, 1980?

➢ **Background:**
- ❍ After Independence, **vast areas of forest land were designated as reserved and protected forests.**
  - ● However, many forested areas were left out, and areas without any standing forests were included in **'forest' lands.**
- ❍ In 1996, the **Supreme Court suspended the felling of trees across the country,** and ruled that the **FC Act would apply to all land parcels that were either recorded as 'forest' or resembled the dictionary meaning of forest.**
- ❍ In June 2022, the government amended the **Forest Conservation Rules** to propose a **mechanism to**

Note:

drishti

allow developers to raise plantations "over land on which the (FC) Act is not applicable" and to **swap such plots against subsequent requirements of compensatory afforestation.**

- ➢ **Proposed Changes:**
  - ❍ Preamble to the Act:
    - It proposes to insert a **preamble to the Act to encompass the country's rich tradition of preserving forests**, their bio-diversity and tackling **climate change** challenges within its ambit.
  - ❍ **Restrictions on Activities in Forest:**
    - The Act restricts the **de-reservation of forest or use of forest land for non-forest purposes**. Such restrictions may be lifted with the prior approval of the central government. **Non-forest purposes include use of land for cultivating horticultural crops or for any purpose other than reafforestation.**
    - The Bill adds more activities to this list such as: **(i) zoos and safaris under the Wild Life (Protection) Act, 1972 owned by the government or any authority, in forest areas other than protected areas, (ii) eco-tourism facilities, (iii) silvicultural operations (enhancing forest growth), and (iv) any other purpose specified by the central government**.
  - ❍ **Land under the Purview of the Act:**
    - The Bill provides that two types of land will be under the purview of the Act**: (i) land declared/ notified as a forest under the Indian Forest Act, 1927 or under any other law, or (ii) land not covered in the first category but notified as a forest on or after October 25, 1980 in a government record**.
    - Further, the Act will not apply to land changed from forest use to non-forest use on or before December 12, 1996 by any authority authorized by a state/UT.
  - ❍ **Power to Issue Directions:**
    - **T**he Bill adds that the **central government may issue directions for the implementation of the Act** to any other authority/ organisation under or recognised by the centre, state, or union territory.
  - ❍ **Exemptions:**
    - It seeks to exempt all **strategic linear projects of "national importance and concerning national**

security" within **100 km of international borders**, the **LAC,** and the **LoC.**
    - The proposed amendment also includes exemptions for **"security-related infrastructure" up to 10 hectares,** and additional activities such as **silvicultural operations, construction of zoos and wildlife safaris, eco-tourism facilities,** and any other activities specified by the Central Government.

- ➢ **Issues:**
  - ❍ With the amendmen**ts, all those forest lands which do not fall in the reserved area but are available in government records before 1980** will not come under the purview of the Act.
    - This **diverts away from the Supreme Court's 1996 verdict which had ensured every forest mentioned in government records gets legal protection against deforestation.**
  - ❍ Critics argue that the terms like 'proposed', 'ecotourism facilities', and 'any other purposes' can be **exploited or misused for activities damaging forests** and ecosystems in forest lands.
    - They also argue that **plantations are a significant threat to Indian forests as they replace the natural ecosystems**, affect soil quality, and **particularly threaten the native biodiversity.**

Copyright Act 1957

Why in News?

Recently, the Bombay High Court has **disposed the petitions** by an actor, who challenged the sales tax levied on her income from advertisements and performances in award shows.

The case has raised questions about whether actors hold a Copyright for their performances and whether **they are liable to pay sales tax for it.**

- ➢ It also deals with how **Intellectual Property** is treated for taxation purposes.

What is the Case about?

- ➢ The actor challenged the imposition of a sales tax on her revenue from advertisements and award show performances.
  - ❍ The tax department argued that she was selling her copyright and thus owed an indirect tax.

➢ However, the actor argued that, as per **Section 2 (d) of the Copyright Act,** the producers of the shows are the original creators and possess the respective videos' copyright and she couldn't sell or transfer it adding that **she is a 'performer' under the law** and acquired **performer's rights under section 38 and 38A of Copyright Act.**

What are Performer's Rights?

➢ The Copyright Act of 1957 has a provision called Section 38 which recognizes **"Performer's Rights" for artists,** including singers and actors, for their performances in literary works, movies, and songs.

➢ These rights protect the **artist's work for 50 years** after the performance. This amendment was made in 2012 to protect artists and ensure they receive royalties for their work.

➢ **These rights cannot be transferred or sold** through an agreement, and **production houses cannot buy them out.**

   ❍ This ensures that the **artist retains ownership of their work** and receives fair compensation for it.

What is the Copyright Act 1957?

➢ **About:**

   ❍ Copyright is a legal right that protects **original works of literature, art, music, films, and computer programs**, among others, in India.

   ❍ It **safeguards expressions of ideas rather than the ideas themselves.** The owner of a copyright has exclusive rights to adapt, reproduce, publish, translate, and communicate the work to the public.

   ❍ The act has undergone several revisions since **it was first passed in 1958.** The most recent amendment was in 2012.

➢ **Key Sections:**

   ❍ **Section 2:** Deals with various definitions of the work which can be covered under the definition of copyright.

     ● For example, Section 2(o) deals with literary works, Section 2(h) includes all dramatic works under the definition of copyright protection.

   ❍ **Section 13:** Provides copyright protection to literary works, musical works, dramatic works, cinematographic films, and sound recordings, among others.

   ❍ **Section 14:** Grants the copyright owner a set of exclusive rights such as **adapting, reproducing, publishing, translating,** and communicating the work to the public.

     ● No one can exercise these rights unless they have the permission of the copyright owner.

Note:

➢ In addition to the act, the **Copyright (Amendment) Rules 2021**, were brought into effect to bring the copyrights in line with **other relevant laws.** Under the rules:

   ❍ Provisions have been introduced to e**nsure accountability and transparency in the collection and distribution of royalties.**

   ❍ The Copyright Board has been merged with the **Appellate Board**, and the compliance requirements for software registration have been reduced.

   ❍ The applicant has the option to file the first 10 and last 10 pages of the source code, or the entire source code if it's less than 20 pages, with no blocked or redacted portions.

   ❍ The Central Government has 180 days to respond to an application for registration as a copyright society.

India Justice Report 2022

Why in News?

According to the India Justice Report (IJR) 2022, Karnataka has achieved the **top rank among the 18 large and mid-sized states** in **delivery of justice** with populations over one crore.

➢ Tamil Nadu has ranked in the second position; Telangana third; and Uttar Pradesh is at rank 18 which is the lowest.

What is IJR?

➢ The IJR is an initiative of **Tata Trusts in collaboration with Centre for Social Justice**, Common Cause and Commonwealth Human Rights Initiative among others.

➢ It was first published in 2019.

➢ It **assesses the performance of states in terms of justice delivery,** by considering several parameters such as **police, judiciary, prisons, and legal aid** to assess the overall performance of each state.

What are the Key Highlights of the Report related to Judiciary?

➢ **Ranking of Justice Delivery:**
  ❍ The list of 7 Small States with a population less than one crore each, was topped by Sikkim which was ranked second in 2020.
  ❍ Sikkim has been followed by Arunachal Pradesh and Tripura. The State of **Goa is at rank Seven which is the lowest.**

➢ **Shortage of Judges:**
  ❍ The **Indian judiciary** is facing a severe shortage of judges and infrastructure, leading to rising pendency, increasing caseloads, and declining case clearance rates (CCR) in lower courts.
    ● As of December 2022, the High Courts were functioning with only 778 judges against a sanctioned strength of 1,108 judges.

➢ **Pendency:**
  ❍ The number of cases pending per judge is rising in most states over the last five years, while the sanctioned strength has remained the same.
    ● The average pendency in **High Courts is highest in Uttar Pradesh (11.34 years) and West Bengal (9.9 years)**, while it is lowest in Tripura (1 year), Sikkim (1.9 years), and Meghalaya (2.1 years).

➢ **Increased Caseload:**
  ❍ The caseload per judge has steadily increased, with the caseload per judge increasing in 22 states and Union Territories between 2018 and 2022.

➢ **Case Clearance Rate:**
  ❍ The CCR in High Courts improved by six percentage points (88.5% to 94.6%) between 2018-19 and 2022 but declined by 3.6 points in lower courts (93% to 89.4%).
  ❍ High Courts are increasingly clearing more cases annually than subordinate courts.
    ● In 2018-19, only four High Courts had a CCR of 100% or more. In 2022, this more than double to 12 High Courts.

➢ **Court Halls:**
  ❍ Nationally, the number of court halls appears sufficient for the number of actual judges, but space **will become a problem if all the sanctioned posts are filled**.
  ❍ In August 2022, there were 21,014 court halls for the 24,631 sanctioned judges' posts, a shortfall of 14.7%.

National Deficits

⚖ Judiciary

Judge vacancy

No court works with a full complement of judges except the High Court of Sikkim and the district courts in Chandigarh.

SC/ST/OBC

At the district court level **no state/UT could fully meet** all its Scheduled Castes, Scheduled Tribes and Other Backward Classes quotas. Data on SC/ST/OBC judges is not available for High Courts.

Case Clearance Rate

Among the 18 large and mid-sized states, **only Kerala could achieve case clearance rates of 100 per cent** and more at both High Court and subordinate court levels.

➢ **Recommendations:**
  ❍ The shortage of judges and infrastructure is a significant concern for the Indian judiciary, leading to a rise in pendency and declining CCR in lower courts. The government needs to address this issue by f**illing the vacant judge posts, providing adequate infrastructure**, and taking measures to improve the efficiency of the judicial system.
  ❍ There is a need for better police training and infrastructure, reducing overcrowding in prisons, and improving the speed and efficiency of the judicial system.
  ❍ There should be greater **attention to be paid to the needs of victims of crime**, including improving access to legal aid and victim compensation schemes.
  ❍ By addressing these challenges, **India can move closer to achieving a more equitable and effective criminal justice system.**

What are Other Findings?

National Deficits

👮 Police

SC/ST/OBCs

Every state has statutorily mandated quotas for SC, ST and OBC. In the police, **only Karnataka** has been able to fulfil these reservations.

Women

Not a single state/UT meets their own reserved quotas for women in police.

Rural-Urban Divide

In 19 states/UTs **urban police stations serve greater populations than their rural counterparts.**

Kerala's urban police stations serve ten times the population of a rural one and Gujarat's four times.

Note:

SHRC

33,312
Total number of **pending cases** across all 25 State Human Rights Commissions in March 2021

44%
National average vacancy across 25 SHRCs

CCTVs

Compliance of Supreme Court judgment on installation of CCTVs

Only Arunachal Pradesh reports having CCTV cameras in all 14 spots (as directed by the apex court) in all its 24 police stations. Only 8 states/UTs (Andaman & Nicobar Islands, Arunachal Pradesh, Kerala, Ladakh, Tripura, Karnataka, Delhi, Goa) reported having night vision-equipped CCTVs.

Legal Aid

9,417
The **reduction in the number of Legal services clinics** dropping to 4,742 (2022) from 14,159 (2020)

₹7,322 crore
The total **value of settlement by National Lok Adalats** between 2021-2022

Prisons

32 states where **share of undertrials** is more than 60%

24 states/UTs that **provided education** to less that 5% inmates during 2021

5 states that **didn't provide any vocational training** to inmates in 2021

National Electricity Plan for 2022-27

Why in News?

The latest draft of the **National Electricity Plan (NEP)**, which covers the period 2022-27, marks a **significant departure from its previous edition**, which had focused primarily on renewable energy.

What is the National Electricity Plan?

➢ **About:**
   ○ The NEP is a crucial document that **guides the development of the power sector** in India. It is formulated by the **Central Electricity Authority (CEA)** every five years under the **Electricity Act, 2003.**
   ○ The CEA formulates **short-term (5-year) and prospective plans (15-year)** to assess the demand for planning capacity addition and coordinate the activities of various planning agencies for the optimal utilization of resources.
   ○ The NEP provides a review of the last five years (2017-22), capacity addition requirements for 2022-27, and **projections for the period 2027-2032.**
   ○ The first **NEP was notified in 2007**, the Second Plan in December 2013, and the third plan which covers the detailed Plan for 2017-22 and the perspective Plan for 2022-27 was notified in 2018.

➢ **New Draft:**
   ○ It recognizes the **need for additional coal-based capacity,** ranging from 17 GW to nearly 28 GW, till 2031-32, over and above the 25 GW of coal-based capacity that is currently under construction.
   ○ The draft Plan also highlights the need for significant investments in battery storage, with an estimated requirement of **between 51 GW to 84 GW by 2031-32.**
   ○ It projects an increase in the **Plant Load Factor (PLF)** of coal-fired power plants from 55% up to 2026-27 to 62 % in 2031-32.
   ○ It also emphasizes the challenges posed by the **increasing reliance on renewables,** which will require careful management and planning in the years ahead.

What is the Power Scenario of India?

ALL INDIA INSTALLED CAPACITY AS ON 31.03.2022 (ALL VALUES ARE IN MW)

RES, 156607.90, 39%
Coal, 204079.50, 51%
Lignite, 6620.00, 2%
Nuclear, 6780, 2%
Diesel, 509.71, 0%
Gas, 24899.51, 6%
TOTAL: 399496.61 MW
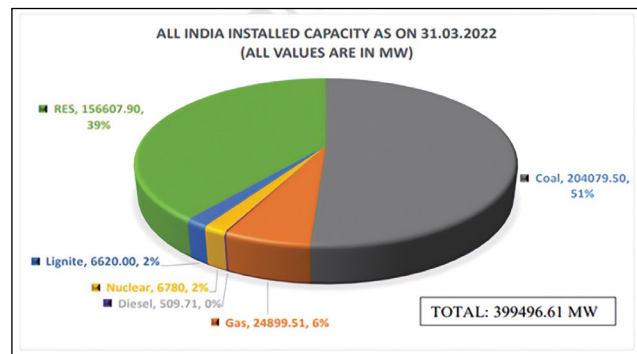
What are the Related Challenges?

➢ **Reliance on Old Plants:**
   ○ India's fleet of coal-fired thermal power plants is over 25 years old and runs on outdated technology, which **raises concerns about grid stability and power interruptions.**
➢ **Difficult to Manage the Renewables-Dominated Grid:**

Note:

❍ While there has been a pronounced reliance on renewable generation for meeting capacity additions, t**here is a lack of clarity on how the grid will be managed.** The slow development of hydropower and zero-inertia solar generators has resulted in a decrease in inertia, **which provides stability to the grid**.

➢ **Inadequate Funding:**

❍ If battery storage is to be relied on to back up renewable generation, **it requires significant investments.**

● The CEA report estimates that the total fund requirement for **Battery Energy Storage Systems (BESS)** between 2022-27 is approximately 14.30 lakh crore. However, the CEA has only allocated a budget of 8 lakh crore for BESS development for a 10-year period.

➢ **Lack of Evaluation:**

❍ There is no evaluation of the ramping rate for thermal plants under different solar generation scenarios.

● The ramping rate is the rate at **which a power plant can increase or decrease its output.**

❍ Without proper assessment, it could l**ead to issues such as overloading, underloading,** or power interruptions.

How can the Related Challenges be Addressed?

➢ **BESS** based on **Lithium-ion batteries** offer a cost-effective solution to balance the grid against load fluctuations and intermittency in generation. The energy storage can provide energy time-shifting, allowing power to be used when it is needed rather than being wasted when it is generated.

➢ It is important to continue investing in the development of battery storage technology, as well as exploring new solutions such as water-based systems. This will help address the challenges **outlined in the National Electricity Plan for 2022-27** and ensure a stable and reliable power supply in India.

➢ Additionally, increasing the use of hybrid generation models will help to transition to renewable energy sources while ensuring backup power is available when needed.

Lokayukta

Why in News?

The **Kerala Lokayukta,** has referred a case related to **alleged nepotism and anomalies** in the **Chief Minister's Distress Relief Fund (CMDRF)** to a three-member full bench for investigation.

What is Lokayukta?

➢ **About:**

❍ The Lokayukta is the **Indian Parliamentary Ombudsman**, executed into power, **through and for, each of the State Governments of India.**

❍ It is an **anti-corruption authority.** The object of Lokayukta system in a state is to make **investigation of grievances, allegations against public servants.**

➢ **Origin:**

❍ The origin of the Lokayukta can be drawn to the **Ombudsman in Scandinavian countries.**

❍ In India, the **Administrative Reforms Commission, (1966-70)**, had recommended the creation of the **Lokpal at the Centre and Lokayukta in the states.**

❍ Before the passing of the **Lokpal and Lokayuktas Act in 2013,** several states in India passed laws for creating the Institution of 'Lokayukta'.

❍ Maharashtra was first in this respect with its **Lokayukta body established in 1971.**

➢ **Appointment:**

❍ The **lokayukta and upalokayukta are appointed by the Governor** of the state. While appointing, the governor in most of the states consults **(a) the chief justice of the state high court, and (b) the leader of Opposition in the state legislative assembly.**

➢ **Tenure:**

❍ **In most of the states, the term of office fixed for lokayukta is of 5** years duration or **65 years of age,** whichever is earlier. He is **not eligible for reappointment for a second term.**

➢ **Issues Related to Lokayukta:**

❍ **No Clear Legislation:**

● The Lokpal and Lokayuktas Act 2013 only has **one section on Lokayukta, which mandates that states must pass the Lokayukta Act within one year** and there is **no information about their makeup, powers, or other features**.

Note:

- States, in fact, have **complete autonomy over how their own Lokayuktas are appointed,** how they work, and under what conditions they serve.
  - ○ **Delay in Resolution:**
    - One of the major challenges faced by the Lokayukta is the **delay in the investigation and resolution of complaints.**
    - The Lokayukta is also **dependent on the state government for funding and infrastructure**, which can lead to interference and lack of independence.

Competition (Amendment) Bill, 2022

Why in News?

Recently, the Competition (Amendment) Bill, 2022, which seeks to amend the Competition Act, 2002, was passed in the **Lower House** amid protests from the Opposition.

What is the Competition Act, 2002?

- ➢ The Competition Act, 2002, **regulates competition in the Indian market and prohibits anti-competitive practices such as cartels**, abuse of dominant market position, and mergers and acquisitions that may have an adverse effect on competition. The Act has been amended by the Competition (Amendment) Act, 2007.
- ➢ The **Competition Commission of India (CCI)** is responsible for implementing and enforcing the Act.
- ➢ The **Competition Appellate Tribunal** is a statutory body created in accordance with the Competition Act, 2002 to hear and **regulate on appeals against any rules made, decisions made, or orders made by the Competition Commission of India.**
- ➢ The government replaced the Competition Appellate Tribunal with the **National Company Law Appellate Tribunal (NCLAT)** in 2017.

What are the Amendments to the Competition Act Proposed?

- ➢ **Penalties for Competition Law Violations:**
  - ○ The Bill amends the definition of **"turnover"** to include global turnover derived from all products and services by a person or an enterprise.
  - ○ The amendment allows for the imposition of penalties for competition law violations based on a company's global turnover, rather than just its turnover in India.

- ➢ **Timelines for Approving Combinations:**
  - ○ The Bill reduces the time limit for the CCI to form a **prima facie opinion on a combination from 30 working days to 30 days.**
  - ○ The change aims to speed up the process of approving mergers and acquisitions in India.
- ➢ **Review of Regulations:**
  - ○ The Bill seeks to amend the Competition Act, 2002, to **regulate mergers and acquisitions based on the value of transactions.** Deals with transaction value of more than Rs 2,000 crore will require CCI's approval.
  - ○ The Bill proposes to reduce the timeline for the CCI to pass an order on such transactions from 210 days to 150 days.
  - ○ The Bill decriminalizes certain offences under the Act by **changing the nature of punishment from imposition of fine to civil penalties**.
  - ○ These offences include failure to comply with orders of the CCI and directions of the Director General related to anti-competitive agreements and abuse of dominant position.

What are the Benefits of the Competition (Amendment) Bill?

- ➢ **Promoting Ease of Doing Business:**
  - ○ The amendments to the Competition Act aim to reduce regulatory hurdles and promote ease of doing business in India. The amendments are expected to provide greater clarity to businesses operating in India and reduce the compliance burden for companies.
- ➢ **Enhancing Transparency:**
  - ○ The inclusion of global turnover in the definition of "turnover" aims to enhance transparency and accountability in the Indian market. The amendment ensures that companies cannot escape penalties for competition law violations by shifting their revenue to other countries.

Swachh Bharat Mission-Urban

Why in News?

The Minister for Housing and Urban Affairs recently said that **Swachhata has become a foundational tenet in not just every govt scheme but also in the way of life of citizens**.

- ➢ The **Swachh Bharat Mission – Urban (SBM-U)** was the first large-scale programme to instil the principle of **Jan Bhagidari.**
- ➢ Also, **'Swachhotsav - 2023: Rally for Garbage Free Cities'** was held in New Delhi as part of **India's celebration of the International Day of Zero Waste 2023**.

What is International Day of Zero Waste?

- ➢ The **International Day of Zero Waste**, observed for the first time on **30 March 2023** and is jointly facilitated by **UNEP** and UN-Habitat.
- ➢ It aims to **raise awareness of the importance of zero waste and responsible consumption** and production practices and **urban waste management** contributing to achieving **sustainable development.**
- ➢ The day calls on **rethinking our practices and for embracing a circular economy** as a key for **addressing the triple planetary crisis of climate change,** nature loss and pollution, and **putting the planet, and humanity, on a path to health and prosperity.**

What is the Status of Swachh Bharat Mission-Urban?

- ➢ **Achievements:**
  - ○ **Open Defecation Free (ODF):**
    - ● Urban India has become **Open Defecation Free (ODF),** with all **4,715 Urban Local Bodies (ULBs)** completely ODF.
    - ● **3,547 ULBs are ODF+** with functional and hygienic community and public toilets, and **1,191 ULBs are ODF++ with complete faecal sludge management.**
  - ○ **Waste Processing:**
    - ● **Waste Processing in India** has gone up by over **4 times from 17% in 2014 to 75% in 2023,** aided through **100% door-to-door waste collection in 97% wards** and **source segregation** of waste being practised by citizens across almost **90% wards in all ULBs in the country.**
  - ○ **Garbage Free Cities:**
    - ● The **Garbage Free Cities (GFC)-Star rating** protocol launched in January 2018 has increased from only **56 cities in the first year to 445 cities till date**, with an ambitious target of having at least **1,000 3-star GFC by October 2024.**

- ● The **2023-24 budget** has reinforced India's commitment to building a circular economy through an enhanced focus on **scientific management of dry and wet waste.**
- ○ **Women in Spotlight:**
  - ● **Rally for Garbage Free Cities:**
    - ■ The **Rally for Garbage Free Cities** is a **women-led Jan Andolan**, where lakhs of citizens have taken on the **responsibility of cleaning their streets, neighbourhoods, and parks.**
- ○ **'Stories of Change' Compendium:**
  - ● The **'Stories of Change' Compendium** captures some of the amazing on-ground successes of more than **300 women Self-Help Group** members who have travelled across cities to learn **various waste management models.**
  - ● **4 lakh women are directly engaged in sanitation and waste management as an enterprise in urban India**, providing dignity and livelihood opportunities for women.
- ○ **Challenges:**
  - ● **Lack of Waste Management Infrastructure:** India has a shortage of infrastructure and resources to manage waste effectively. Many cities lack adequate **landfill sites, waste processing facilities, and waste collection systems.**
    - ■ For example - the **Ghazipur landfill in Delhi,** which has exceeded its capacity **causing air and water pollution** and posing a health hazard to nearby residents.
- ○ **Unsustainable Packaging:** The popularity of online retail and food delivery apps, though restricted to big cities, is contributing to the rise in **plastic waste.**
  - ● **E-commerce** companies too have come under **fire for excess use of plastic packaging.**
  - ● Also, there are usually **no disposal instructions included with packaged products.**
- ○ **Lack of Data Collection Mechanism:** India lacks **time series data or panel data in connection with solid or liquid waste**.
  - ● So it is very difficult for the waste planners of the country to **analyse the economy of waste management.**

Note:

Economic Scenario

Highlights

- World Bank Forecasts India's Economic Growth Rate
- CBDT Signs 95 Advance Pricing Agreements
- RBI's Decision to Pause Interest Rate Hikes
- National Mission on Natural Farming
- Biotech-KISAN Scheme
- Open-Source Seeds Movement
- Dabba Trading: An Unregulated and Illegal Practice
- Nifty Reits & InvITs Index
- Retail Inflation Slides Below 6%
- RBI's Green Deposits Framework
- Debt of Emerging Markets & Developing Economies Rose
- Northeast Top Tourist Destination in 2022
- Foreign Trade Policy 2023
- India and Malaysia Agree to Settle Trade in Indian Rupees

World Bank Forecasts India's Economic Growth Rate

Why in News?

The **World Bank** has released a report titled **"South Asia Economic Focus: Expanding Opportunities: Toward Inclusive Growth,"** which provides an economic forecast for India, Sri Lanka, and Pakistan.

What are the Major Highlights of the World Bank Report?

➢ **India:**
  ○ **Growth Rate:**
    - India's **growth rate has been downgraded to 6.3%** for **FY 2023-24** ,and the report cites **high borrowing costs and slower income growth** as the primary reasons for this downgrade.
      ■ The **female labour participation rate** and the size and productivity of the informal sector are also concerns in India.
    - However, the **services sector and the construction sector are the fastest-growing industries in India,** with strong investment growth and high business confidence.
    - India's growth rate is expected to grow at **6.4% in FY 2024-25,** which is an upgrade of **0.3 % points from the previous forecast.**
  ○ **Sri Lanka and Pakistan:**

- The outlook for **Sri Lanka and Pakistan is bleak**, with Sri Lanka experiencing a contraction of -4.3% in 2023 and negotiating a **USD 3 billion loan from the IMF,** while Pakistan is forecasted to have a growth rate of **0.4% for the year ending June 30, 2023.**

What are the Major Projects in India Supported by the World Bank?

➢ **India Energy Efficiency Scale-up Program:** The development objectives of **Energy Efficiency Scale-up Program for India** are to **scale up energy savings in residential and public sectors,** strengthen Energy Efficiency Services Limited's (EESL) institutional capacity, and enhance its access to commercial financing.

➢ **Pradhan Mantri Gram Sadak Yojana**: The project aims to connect unconnected habitations with all-weather roads. **Key to the program is an all-weather access to the respective roads.**

➢ **Eastern Dedicated Freight Corridor Project:** The Government of India and the World Bank today signed a **USD 650 million agreement for faster and more efficient movement of raw materials and finished goods** between the north and eastern parts of India.

➢ **Innovate in India for Inclusiveness:** The development objective of Innovate in India for Inclusiveness is to facilitate **innovation in biopharmaceutical products** and medical devices that address public health priorities in India.

➢ **National Dairy Support Project**: The development objective is to increase the **productivity of milch**

Note:

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animals and improve market access of milk producers in project areas.

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What is World Bank?

➢ **About:**
- ❍ It was **created in 1944**, as the International Bank for Reconstruction and Development (IBRD) along with the **IMF. The IBRD later became the World Bank.**
- ❍ The World Bank Group is a unique global partnership of five institutions working for sustainable solutions that reduce poverty and build shared prosperity in developing countries.
- ❍ The World Bank is one of the **United Nations'** specialized agencies.

➢ **Members:**
- ❍ It has **189 member countries.**
- ❍ **India is also a** member country.

➢ **Major Reports:**
- ❍ Ease of Doing Business (Stopped publishing).
- ❍ Human Capital Index.
- ❍ World Development Report.

➢ **Its Five Development Institutions:**
- ❍ International Bank for Reconstruction and Development (IBRD)
- ❍ International Development Association (IDA)
- ❍ International Finance Corporation (IFC).
- ❍ Multilateral Guarantee Agency (MIGA)
- ❍ International Centre for the Settlement of Investment Disputes (ICSID)
  - • India is not a member of ICSID.

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CBDT Signs 95 Advance Pricing Agreements

Why in News?

The **Central Board of Direct Taxes (CBDT)** has entered into a record **95 Advance Pricing Agreements (APAs)** in FY 2022-23 with **Indian taxpayers**.

➢ This includes **63 Unilateral APAs (UAPAs) and 32 Bilateral APAs (BAPAs).**
- ❍ This is the maximum number of BAPAs that CBDT has signed in any **financial year** till date.

- • **Mutual Agreements** with India's treaty partners namely **Finland, the UK, the US, Denmark, Singapore, and Japan** led to the signing of the BAPAs.

What is an Advance Pricing Agreement (APA)?

➢ **About:**
- ❍ The **Advance Pricing Agreement (APA)** programme in India was launched in **2012** vide the **Finance Act, 2012** through the insertion of **Sections 92CC and 92CD in the Income-tax Act, 1961.**
- ❍ APA is an **agreement between a taxpayer and tax authority determining the transfer pricing methodology,** for pricing the taxpayer's international transactions for future years.
  - • Once the APA is sealed, the **methodology is to be applied for a certain period of time** based on the fulfilment of certain terms and conditions.

➢ **Types:**
- ❍ An APA can be unilateral, bilateral, or multilateral.
  - • **Unilateral APA:** An APA that involves **only the taxpayer and the tax authority of the country** where the taxpayer is located.
  - • **Bilateral APA (BAPA):** an APA that **involves the taxpayer, associated enterprise (AE) of the taxpayer in the foreign country,** tax authority of the country where the taxpayer is located, and the foreign tax authority.
  - • **Multilateral APA (MAPA):** an **APA that involves the taxpayer, two or more AEs of the taxpayer in different foreign countries**, tax authority of the country where the taxpayer is located, and the tax authorities of AEs.

➢ **Significance:**

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Central Board of Direct Taxes (CBDT)

➢ It is a **statutory authority** that functions under the **Central Board of Revenue Act,** 1963.
- ❍ It is a part of the **Department of Revenue in the Ministry of Finance.**

➢ It provides **inputs for policy and planning of direct taxes in India** and is also responsible for the administration of direct tax laws through the **Income Tax Department.**

➢ Direct Taxes include **income tax,** corporation tax etc.

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Note:

❍ The APA programme has contributed significantly to the Government of India's mission of promoting **ease of doing business.**
  ● The programme **especially benefits cross-border transactions.**

RBI's Decision to Pause Interest Rate Hikes

Why in News?

Recently, The **RBI's Monetary Policy Committee (MPC)** decided to **pause interest rate** hikes and assess the impact of previous hikes.

➢ Since May 2021, **RBI had been consistently raising interest rates to reduce inflation,** which was far above its target level of **4%.**

What is Inflation Targeting?

➢ **About:**
  ❍ Inflation targeting in India is a **monetary policy framework** that was adopted by the **Reserve Bank of India (RBI) in 2016.**
    ● Under this framework, the **RBI sets a target for the inflation rate and uses monetary policy instruments to achieve it**.
  ❍ Currently, RBI's primary objective is to achieve the **4% inflation target.** RBI has a comfort zone of **+/- 2% within which inflation must remain.** This means that the RBI aims to keep the **inflation rate between 2% and 6%.**
    ● The last two readings of inflation (January and February 2023) **were 6.5% and 6.4%, respectively.**

➢ **Reasons to Pause Interest Rate Hikes:**
  ❍ RBI's strategy of hiking interest rates to control inflation has limitations. According to the RBI, under the current circumstances, **monetary measures alone may not be sufficient to control inflation.**
    ● **Fiscal policy (government's taxes and spending)** may be more effective in bringing down current inflation.

➢ **Advantages:**
  ❍ Increased central bank transparency and accountability.
  ❍ Allows investors and the public to anticipate interest rate changes.

❍ Lowers inflation expectations.

➢ **Limitations of RBI's Inflation Targeting:**
  ❍ **Limited Impact on Supply-side Factors:** Inflation targeting can **only control demand-side factors,** such as money supply and interest rates, and **may not be effective in addressing supply-side shocks** such as **crop failures, natural disasters, and global commodity price shocks** due to **disturbed geopolitics.**
  ❍ **Limited Impact on Structural Issues:** Inflation targeting may not be able to address structural issues that contribute to inflation, such as **inefficient distribution systems, inadequate infrastructure, and bureaucratic hurdles.**
  ❍ **Conflict with Other Objectives:** Inflation targeting may conflict with other macroeconomic objectives, such as **economic growth,** employment, and income distribution.

National Mission on Natural Farming

Why in News?

The Government of India has launched the **National Mission on Natural Farming (NMNF)** as a separate and independent scheme to promote **chemical-free and climate-smart agriculture.**

What is the National Mission on Natural Farming?

➢ **About:**
  ❍ The **National Mission on Natural Farming (NMNF)** has been formulated by upscaling the **Bhartiya Prakritik Krishi Paddhati (BPKP)** to promote natural farming across the country.

➢ **Coverage:**
  ❍ NMNF will cover a **7.5 lakh hectare area by developing 15,000 clusters.** The farmers willing to implement natural farming on their field will be **registered as cluster members,** each cluster shall comprise **50 farmers or more with 50-hectare land.**
  ❍ Also, **each cluster can fall into one village** or spread across 2-3 nearby villages under the same gram panchayat.

Note:

➢ **Financial Assistance:**

○ Under NMNF, farmers will receive a **financial assistance of ₹15,000 per hectare per year for three years** for the creation of on-farm input production infrastructure.

○ However, the **incentives would be provided to farmers only when they commit to natural farming** and have actually taken it up.

○ If a farmer defaults or does not continue with natural farming, subsequent instalments shall **not be disbursed.**

➢ **Web Portal for Implementation Progress:**

○ A **Web portal** has also been launched for the **promotion of natural farming with information on the implementation framework**, resources, implementation progress, farmer's registration, blog, and so on.

➢ **Master Trainers:**

○ The agriculture ministry is undertaking large-scale training of **master trainers, 'champion' farmers and practising farmers** in the techniques of natural farming through the **National Institute of Agricultural Extension Management (MANAGE)** and **National Centre of Organic and Natural Farming (NCONF)**.

➢ **Establishment of BRCs:**

○ The Centre intends to set up **15,000 Bhartiya Prakritik Kheti Bio-inputs Resources Centres (BRCs)** to provide easy access to bio-resources wherein cow dung and urine, neem and bioculture play an important role.

○ These **bio-input resource centres** would be set up alongside the proposed **15,000 model clusters of natural farming.**

What is Natural Farming?

➢ **About:**

○ **Natural farming** is a **chemical-free farming method** based on locally available resources.

○ It promotes **traditional indigenous practices**, which give freedom to farmers from externally purchased inputs.

○ The major stress of natural farming is **on-farm biomass recycling with biomass mulching,** use of **on-farm desi cow dung-urine formulation,** managing pests through diversity, on-farm botanical concoctions, and exclusion of all **synthetic chemical inputs directly or indirectly.**

➢ **Significance:**

○ **Ensures Better Health:** As Natural Farming does not use any synthetic chemicals**; health risks and hazards are eliminated.**

○ Food has **higher nutrition density** and therefore offers better health benefits.

○ **Increased Farmers' Income:** Natural Farming aims to make farming viable and aspirational by increasing net incomes of farmers on account of cost reduction**, reduced risks, similar yields, incomes from intercropping.**

○ **Rejuvenates Soil Health:** The most immediate impact of **Natural Farming** is on the **biology of soil**—on microbes and other living organisms such as earthworms.

○ It improves soil health and in turn **increases productivity.**

➢ **Issues:**

○ **Lack of Irrigation Facility:** Only **52% of India's Gross Cropped Area (GCA)** is irrigated at the national level. Even though India has made significant strides since independence, **many farms still rely on the monsoon for irrigation,** limiting their ability to plant more crops.

○ **Lack of Readily Availability of Natural Inputs:** Farmers often cite the lack of readily available natural inputs as a **barrier to converting to chemical-free agriculture**. Not every farmer has the time, patience, or labour to develop their own natural inputs.

○ **Lack of Crop Diversification:** In spite of the rapid commercialization of agriculture in India, most farmers assume cereals will always be their main crop (due to skewed **Minimum Support Prices** in favour of **cereals**) and **ignore crop diversification.**

➢ **Other Initiatives to Promote Natural Farming:**

○ **Paramparagat Krishi Vikas Yojana (PKVY):**

● The NMNF is an upscaling of the **Bhartiya Prakritik Krishi Paddati (BPKP)** which is a sub-scheme under **Paramparagat Krishi Vikas Yojana (PKVY).**

● PKVY provides financial assistance to farmers who want to adopt organic farming practices and encourages them to use eco-friendly techniques for pest management and soil fertility management.

Note:

○ **Climate Smart Agriculture:**

- **Climate smart agriculture** is an integrated approach to managing landscapes-**cropland, livestock, forests, and fisheries**-that address the interlinked challenges of food security and climate change.

- It aims to tackle three main objectives: **sustainably increasing agricultural productivity and incomes, adapting and building resilience to climate change,** and reducing **greenhouse gas emissions** wherever possible.

Biotech-KISAN Scheme

Why in News?

The **Biotech-Krishi Innovation Science Application Network (KISAN) scheme** has been successful in providing benefits to over 1 lakh 60 thousand farmers in the last one year.

What is Biotech-KISAN Scheme?

➢ **About:** Biotech-KISAN scheme is a **farmer-centric scheme for farmers,** launched in 2017, developed by and with farmers under the **Department of Biotechnology, Ministry of Science and Technology.**

○ It is a pan-India program, following **a hub-and-spoke model and stimulates entrepreneurship and innovation i**n farmers and empowers women farmers.

○ It has a unique feature to identify and promote local farm leadership in both genders.

- Such leadership helps to develop science-based farming besides facilitating the transfer of knowledge.

○ Biotech-KISAN Hubs have been established **covering all 15 agroclimatic zones and Aspirational Districts in the country.**

- **Aim**: The programme links available **science and technology** to the farm by first understanding the problem of the local farmer and then providing scientific solutions to those problems.

○ The Biotech-KISAN hubs are expected to fulfill the technology required to generate agriculture and bio-resource related jobs and better livelihood ensuring biotechnological benefits to small and marginal farmers.

➢ **Counseling and Demonstrations:**

○ Under the scheme farmers are provided counseling and demonstrations on improved **seed**, **planting stock of vegetab**le, interventions for use of plant growth-promoting **rhizobacteria** (PGPR's)/ bio-fertilizers, **irrigation** & protected cultivation technologies.

○ **Improved livestock** (goat, pig), **poultry and fishery** as well as health management of livestock/poultry are also covered under it.

What is Biotechnology in Agriculture?

➢ **Agricultural Biotechnology:**

○ Agricultural biotechnology is a **range of tools,** including traditional breeding techniques, that **alter living organisms, or parts of organisms,** to make or modify products; improve plants or animals; or develop microorganisms for specific agricultural uses.

○ Modern biotechnology today includes the tools of **genetic engineering.**

➢ **Examples:**

○ **Genetically Modified Organisms (GMO):** These are plants, bacteria, fungi and animals whose genes have been altered by manipulation. **GM plants** (Bt Cotton) have been useful in many ways.

○ **Biopesticide: Bacillus thuringiensis is a naturally occurring soil bacterium** that causes disease on insect pests. It is **accepted in organic farming and is considered ideal for pest management** due to its low cost, ease of application, high virulence and narrow host specificity.

➢ **Benefits:**

○ GMO leads to a number of advantages in the crops which include -there is **less loss after harvest,** the crops **can be modified to have additional nutrients value** for human welfare.

○ The use of some of these crops **can simplify work and improve safety for farmers.** This allows farmers to spend less of their time managing their crops and **more time on other profitable activities.**

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Open-Source Seeds Movement

Why in News?

With declining public sector breeding and rising dominance of private sector in seed sector, the concept of **Open-Source Seeds becomes increasingly relevant.**

➢ 'Open-Source seeds' was **first suggested by a Canadian plant-breeder - T.E. Michaels** in 1999 based on the principles of Open-Source Software.

➢ Farmers have been sharing and innovating on seeds for centuries without claiming exclusive rights or **intellectual property**, similar to how programmers have been sharing and innovating on software.

What is Open-Source Software?

➢ OSS is software whose **source code is made available to the public** for anyone to view, modify, and distribute under an open source license. This license typically allows u**sers to access and modify the source code**, as well as to redistribute the software without any restriction on the use or distribution.

   ○ The concept of OSS originated in the 1980s, but gained wider recognition and popularity in the 1990s, thanks to the efforts of the Free Software Foundation (FSF) and the Open Source Initiative (OSI).

➢ The benefits of OSS include the ability to **customize the software to meet specific needs**, a reduced cost of ownership, and the potential for greater security due to the increased transparency of the source code. In addition, OSS can foster innovation by allowing developers to build on existing software and improve it.

What are Plant Breeders' Rights?

➢ The growth of the commercial seed industry, scientific plant-breeding, and the advent of hybrid seeds led to the establishment of **Plant Breeders' Rights (PBR) in many countries.**

➢ Under the PBR regime, plant breeders and developers of new varieties have the **exclusive right to demand royalties on seeds** and legally enforce PBRs.

➢ This limited the rights of farmers to use and reuse seeds and restricted their ability to innovate.

➢ The establishment of the **World Trade Organization (WTO) in 1994** and the **Trade-Related IPR Agreement (TRIPS)** cast a global IPR regime over plant varieties.

   ○ TRIPS required countries to provide at **least one form of IP protection for plant varieties,** which raised concerns about the freedom to innovate.

➢ The **Green Revolution** was spearheaded by public-sector breeding institutions and seeds were available as 'open pollinated varieties', or as reasonably priced hybrids with no restrictions on farmers to cultivate, reuse and share.

➢ But the genetic revolution in agriculture was led by the private sector, with seeds mostly made available as hybrids **and/or protected by strong IPRs.**

How is IP Protected in Agriculture?

➢ There are two forms of IPR protection in agriculture: **plant-breeders' rights and patents.**

➢ Together, **they restrict farmers' rights and the freedom to develop new varieties** using germplasm from IP-protected varieties.

➢ They have **thus further consolidated the seed sector** and increased the number of plant varieties covered by IPRs.

What are Open-Source Seeds?

➢ **Need:**

   ○ The high prices of genetically modified seeds and IP claims triggered many problems, including the **State's intervention on Bt cotton seeds in India.** As public sector breeding declined and the private sector began to dominate the seed sector, the **need for alternatives became keenly felt.**

   ○ This is when the success of open-source software inspired a solution

➢ **Open-Source Model:**

   ○ An open-source model was proposed in 2002 by scientists for seeds and plant varieties, calling it the **"BioLinux model"**, and scholars and civil-society members alike discussed and built on it.

   ○ In 2012, Jack Kloppenburg launched the **Open Source Seeds Initiative (OSSI)** in Wisconsin.

   ○ It can be used in farmer-led seed conservation and distribution systems. There are many traditional-variety conservation and sharing initiatives in India, including those involving farmers.

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○ It can also be used to **promote farmer-led participatory plant-breeding exercises.**

○ Traditional varieties often lack uniformity and aren't of excellent quality. Open source principles can help overcome these **two challenges by facilitating testing,** improvisation, and adoption – all of which will ultimately be beneficial to India's food security and climate resilience.

Are there such Initiatives in India?

➢ In India, the **Hyderabad-based Centre for Sustainable Agriculture (CSA)**, part of the Apna Beej Network, developed a model incorporated into an agreement between CSA and the recipient of the seed/germplasm. It is trying to use this approach through three farmer producer organisations (FPOs).

➢ Worldwide, the number of seed firms using open-source models and the crop varieties and seeds made available thereunder is small but growing. India is yet to test and adopt it widely.

➢ Under the **Plant Variety Protection and Farmers' Rights Act (PPVFRA) 2001,** farmers can register varieties as 'farmer varieties' if they meet certain conditions, and **have the right to reuse, replant, and exchange seeds.**

➢ However, they can't breed and trade in varieties protected under the Act for commercial purposes.

Dabba Trading: An Unregulated and Illegal Practice

Why in News?

Recently**, National Stock Exchange (NSE)** issued a string of notices naming **entities** involved in **"dabba trading".**

What is Dabba Trading?

➢ **About:**

○ **Dabba trading** is a form of **informal trading** that takes place outside the purview of the **stock exchanges**.

○ In this practice, **traders bet on stock price movements without incurring a real transaction** to take physical ownership of a particular stock as is done in an exchange.

○ This results in **gambling centred around stock price movements,** which is illegal and unregulated.

● For example**, an investor places a bet on a stock at a price point, say ₹1,000**. If the price point rose to ₹1,500, he/she would make a gain of ₹500. However, if the price point falls to ₹900, the investor would have to pay the difference to the dabba broker.

● Thus, it could be concluded that the **broker's profit equates the investor's loss and vice-versa.** The equations are particularly consequential during **bull runs or bear market.**

➢ **Legality:**

○ It is recognised as an **offence under Section 23(1) of the Securities Contracts (Regulation) Act (SCRA), 1956** and upon conviction, can invite imprisonment for a term extending up to 10 years or a fine up to ₹25 crore, or both.

➢ **Issues Associated:**

○ **Cash Transactions:** Transactions are **facilitated using cash** and the mechanism is operated using unrecognised software terminals, which helps **dabba traders escape taxation.**

● The **use of cash means that they are outside the purview of the formal banking system.** It results in a loss to the government exchequer.

○ **Lack of Security to Investors**: Being outside the regulatory purview implies that **investors are without formal provisions for investor protection, dispute resolution mechanisms** and grievance redressal mechanisms that are available within an exchange.

● The primary risk entails the possibility that the broker defaults in paying the **investor or the entity becomes insolvent or bankrupt.**

○ **Black Money**: It could **potentially encourage the growth of 'black money'** alongside **perpetuating a parallel economy**, which could lead to risks entailing money laundering and criminal activities.

How can Dabba Trading be Prevented?

➢ **Strict Enforcement of Laws:** The **Securities Contracts (Regulation) Act, 1956,** already prohibits 'dabba trading' and provides for severe penalties upon conviction. However, these **laws need to be more strictly enforced**, and culprits should be punished to deter others from engaging in such activities.

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➢ **Increasing Awareness: Retail investors** need to be educated and **made aware of the dangers of 'dabba trading'**. Financial regulators can conduct awareness campaigns and disseminate information about the risks associated with such trades.

➢ **Monitoring Social Media and Mobile Apps:** 'Dabba trading' is often **facilitated through mobile apps and** social media. Regulators can monitor these platforms and take action against those **who promote or engage in it.**

Nifty Reits & InvITs Index

Why in News?

Recently, India's first-ever **Real Estate Investment Trusts (Reits)** and **Infrastructure Investment Trusts (InvITs) Index was launched by National Stock Exchange Indices Ltd, a subsidiary of the** National Stock Exchange of India.

What is the Nifty Reits & InvITs Index?

➢ **About:**
  ❍ The **index aims to track the performance of Reits and InvITs that are publicly listed and traded on the NSE.**
  ❍ The weights of securities within the index are based on their **free-float market capitalization**, subject to a security cap of 33% each and an aggregate weight of top-3 securities capped at 72%.
  ❍ The index has a **base date of 1 July 2019 and a base value of 1,000.**
  ❍ The index will be **reviewed and rebalanced on a quarterly basis**.

➢ **Top Constituents:**
  ❍ The top constituents of the Nifty Reits & InvITs index include Embassy Office Parks Reit, Powergrid Infrastructure Investment, Mindspace Business Parks Reit, and India Grid Trust.
  ❍ The index has 57.5% weight to Real estate, 35.6% to power, and 6.8% to services.

What is Infrastructure Investment Trust?

➢ An **InvITs is a collective Investment Scheme** similar to a **mutual fund**, which enables **direct investment of money from individual and institutional investors in infrastructure projects** to earn a small portion of the income as a return.

➢ InvITs are listed on exchanges just like stocks — through **Initial Public Offering (IPO).**

➢ InvITs are regulated by the **Securities and Exchange Board of India** (SEBI) **(Infrastructure Investment Trusts) Regulations, 2014.**

What is a Real estate Investment Trust?

➢ REIT refers to **an entity created with the sole purpose of channeling investible funds** into operating, owning or financing income-producing real estate.

➢ **REITs are modeled on the lines of mutual funds** and provide investors with an extremely liquid way to get a stake in real estate.

➢ It is a **type of security that provides all types of investors, big or small, with an outlet for regular income, portfolio diversification, and long-term capital appreciation**. Like any other security, REITs can enlist themselves on a stock exchange.

➢ In India, the **REIT were introduced by the SEBI in 2007**.

What is SEBI?

➢ The SEBI was **established on 12th April, 1992** in accordance with the provisions of the **Securities and Exchange Board of India Act, 1992.**

➢ Major Function:
  ❍ To protect the interests of investors in securities.
  ❍ To regulate the securities market.

Retail Inflation Slides Below 6%

Why in News?

Recently, India's retail inflation rate declined to 5.66%, below the **Reserve Bank of India's (RBI)** upper target of 6% in March 2023, primarily due to a decrease in food prices, especially for vegetables.

➢ **Core inflation**, which excludes food and fuel prices, was at **5.95% in March,** down from 6.12% in February.

What is the Significance of the Decline?

➢ The decrease in retail inflation is a **positive development for the economy**.

➢ It provides some relief to consumers who have been dealing with rising prices for essential goods and

services. Moreover, **it could give the RBI more flexibility in its monetary policy decisions** going forward.

➢ However, it remains to be seen if this trend will continue, and if the RBI will adjust interest rates accordingly.

What is Retail Inflation?

➢ **Retail Inflation:**
  ○ Retail inflation, also known as **Consumer Price Index (CPI) inflation**, is the rate at which the **prices of goods and services that consumers buy for personal use increase** over time.
  ○ It measures the **change in the cost of a basket of goods and services** that are typically purchased by households, including food, clothing, housing, transportation, and medical care.
  ○ **Four types of CPI are as follows:**
    ● CPI for Industrial Workers (IW).
    ● CPI for Agricultural Labourer (AL).
    ● CPI for Rural Labourer (RL).
    ● CPI for Urban Non-Manual Employees (UNME).
      ■ Of these, the **first three are compiled by the Labour Bureau** in the Ministry of Labour and Employment. Fourth is compiled by the **NSO in the Ministry of Statistics and Programme Implementation.**
  ○ Base Year for CPI is 2012.
    ● In 2020, the Ministry of Labour and Employment released the **new series of Consumer Price Index for Industrial Worker (CPI-IW)** with base year 2016.
  ○ **The Monetary Policy Committee (MPC)** uses CPI data to control inflation. In April 2014, the RBI adopted the CPI as its key measure of inflation.

What is the Need for Monitoring Inflation in the Economy?

➢ **Price Stability:**
  ○ Inflation erodes the value of money, which makes it **harder for people to plan their finances** and can lead to economic instability.
  ○ By monitoring inflation, **policymakers can take steps to maintain price stability**, which promotes economic growth and stability.

➢ **Consumer and Business Confidence:**
  ○ When inflation is low and stable, it provides **consumers and businesses with confidence** in the economy, encouraging them to spend and invest.

➢ **Interest Rates:**
  ○ Inflation affects interest rates, which in **turn affects borrowing and lending decisions**, investment decisions, and overall economic growth.
  ○ By monitoring inflation, policymakers can adjust interest rates to ensure that the economy is growing sustainably.

➢ **International Competitiveness:**
  ○ High inflation rates can make a **country's exports more expensive**, which can reduce its international competitiveness.
  ○ Monitoring inflation can help policymakers keep inflation in check, which can support a country's **economic competitiveness.**

What is the Wholesale Price Index?

➢ It measures the changes in the prices of goods sold and traded in bulk by wholesale businesses to other businesses.

➢ Published by **the Office of Economic Adviser, Ministry of Commerce and Industry.**

➢ It is the most widely used inflation indicator in India.

➢ Major criticism for this index is that the general public does not buy products at wholesale price.

RBI's Green Deposits Framework

Why in News?

The **Reserve Bank of India (RBI)** has announced a new framework to offer **green deposits to the customers**, aiming at developing a **Green Finance Ecosystem (GFS)** in India.

➢ The framework will come into effect from June 1, 2023.

➢ A green deposit refers to an interest-bearing deposit received by an RE (Regulated Entity) for a fixed period, with the proceeds earmarked for allocation towards green finance.

Note:

What are the Key Features of the Framework?

➢ **Applicability:**

❍ The framework is applicable to **Scheduled Commercial Banks**, including Small Finance Banks, excluding Regional Rural Banks, Local Area Banks and Payments Banks and all deposit-taking **Non-Banking Financial Companies (NBFCs),** including Housing Finance Companies.

➢ **Allocation:**

❍ REs will be required to allocate the proceeds raised through green deposits towards a **list of green activities and projects that encourage energy efficiency** in resource utilization, reduce carbon emissions and greenhouse gases, promote climate resilience and/or adaptation, and improve natural ecosystems and biodiversity.

➢ **Exclusion:**

❍ Projects involving new or existing extraction, **production and distribution of fossil fuels, including improvements and upgrades**, nuclear power, direct waste incineration, alcohol, weapons, tobacco, gaming, or palm oil industries, **renewable energy projects generating energy from biomass** using feedstock originating from protected areas, landfill projects and hydropower plants larger than 25 MW have been excluded from green financing.

➢ **Financing Framework:**

❍ To ensure effective allocation of green deposits, REs must put in place a **Board-approved Financing Framework (FF).** The green deposits shall be denominated in Indian Rupees only.

❍ The allocation of funds raised through green deposits by REs during a financial year shall be **subject to independent third-party verification/ assurance**, which shall be done on an annual basis.

What is Green Finance Ecosystem?

➢ **About:**

❍ GFS refers to the financial system that supports and **enables investments in environmentally sustainable projects** and activities.

● It includes a range of financial products, such as **green bonds,** green loans, green insurance, and green funds, that are designed to promote environmentally friendly practices and projects.

❍ The green finance ecosystem aims to create a financial system that supports the transition to a **low-carbon, resource-efficient, and sustainable economy,** while also addressing the risks and opportunities associated with environmental issues such as **climate change**, pollution, and biodiversity loss.

➢ **Need:**

❍ The financial sector can play a pivotal role in mobilising resources and their allocation thereof in green activities/projects. Green finance is **also progressively gaining traction in India.**

❍ The GFS can augment the **flow of credit to green activities and projects while also protecting the interest of depositors** and addressing greenwashing concerns.

❍ It can promote **sustainable development** and **create a positive impact** on the environment in India.

➢ **Indian Scenario:**

❍ India has commenced its journey for carbon neutrality and put forward a **'Green Deal'** to be achieved by 2070.

● The Green Deal has classified green finance as an enabler to accelerate decarbonisation. It emphasises on the need for an increased flow of capital from the **national government and private entities to establish green infrastructure**.

❍ In 2016, the RBI had released a report in collaboration with **UNEP (United Nations Environment Programme)** and India on the lines of sustainable financial systems.

● The report explores various facets of financial systems in India and its role in accelerating green finance.

❍ Carbon trading has been introduced in the policy framework of the country through the **'Perform Achieve and Trade'** scheme.

❍ According to the World Economic Forum the market for green bonds could be worth more than **two trillion dollars by 2023.**

Note:

drishti

What are the Related Initiatives?

➢ **Encouraging Foreign Capital:** The Government has permitted **Foreign Direct Investment (FDI)** up to 100% under the automatic route in the renewable energy sector.

➢ **Encouraging Renewable energy:**

❍ The Government has waived inter-state Transmission System (ISTS) charges for inter-State sale of solar and wind power for projects.

❍ Making provisions for **Renewable Purchase Obligation** (RPO) and setting up Renewable Energy parks

❍ Announcement of the **National Hydrogen Mission.**

➢ **India's Nationally Determined Contribution:** Under the Paris Agreement which was adopted by signatory countries in 2015, India had submitted **Nationally Determined Contribution (NDC)** with quantified targets.

❍ To reduce the emissions intensity of its **Gross Domestic Product (GDP)** by 33-35% till 2030 from the levels in 2005,

❍ To achieve about 40% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.

Debt of Emerging Markets & Developing Economies Rose

Why in News?

The report from Debt Relief for a Green and Inclusive Recovery (DRGR) Project states that **the sovereign debt of emerging markets and developing economies (EDME) increased by 178%** from USD 1.4 trillion to USD 3.9 trillion between 2008-2021, **indicating a looming debt crisis in the Global South.**

➢ The **G20's** "**Common Framework**" created to provide debt relief has shortcomings, as it failed to bring all creditors, including private and commercial creditors, on board and link debt relief with development and climate goals.

Note: An emerging market economy is the economy of a developing nation that is becoming more engaged with global markets as it grows. Countries classified as **emerging market economies are those with some, but not all, of the characteristics of a developed market** such as India, Mexico, Russia, Pakistan, Saudi Arabia, China, and Brazil.

What are the Factors and Impacts of the Debt Crisis?

➢ **EDMEs are Experiencing Weakened Economic Growth due to:**

❍ Slow recovery from the **COVID-19 pandemic**,

❍ High food and energy prices, and

❍ **Russia's war in Ukraine**.

❍ Escalating climate impacts

❍ Strong US dollar and depreciating currencies for many EMDEs.

➢ **Impacts on Vulnerable Countries:**

❍ Countries vulnerable to climate change tend to face the most significant **debt distress**.

❍ **Higher climate vulnerability** is linked to **lower sovereign borrowing** space.

❍ **High debt service payments, forcing** countries to **set aside** a significant **portion of** their **foreign reserves to pay off debt.**

❍ Providing immediate debt relief to EDMEs could free up their fiscal and borrowing, allowing them to pursue a low-carbon, socially inclusive, and resilient future.

What are the Proposed Solutions?

➢ The report calls for a reform of the Common Framework and proposes three pillars to address the issue.

❍ **The first pillar** involves **public creditors granting significant cuts** in debts to bring a distressed country back to debt sustainability and also helping it achieve development and climate goals.

❍ **The second pillar** involves **private and commercial creditors** granting **debt reductions** comparable to public creditors.

● For the remaining debt, the government should issue new bonds for private creditors, backed by a guaranteed fund.

❍ **The last pillar** is for countries not at risk of debt distress, for which international financial institutions can **provide credit enhancement**.

- **Debt Restructuring:**The report also **calls for the restructuring** of USD **812 billion of debt** owed by 61 countries that are in or at high risk of debt distress.
- At least **USD30 billion in debt should be suspended** over the next five years for 55 of the most debt-distressed countries, the authors calculated.

What is G20 Common Framework?

➢ The Common Framework for debt treatment beyond the Debt Service Suspension Initiative (DSSI) is **an initiative endorsed by the G20 in 2020, together with the Paris Club**, to support, in a structural manner, Low Income Countries with unsustainable debt.

➢ The framework is aimed at providing a coordinated and comprehensive approach to addressing the debt vulnerabilities of low-income countries (LICs) that are facing the most severe debt challenges, exacerbated by the **COVID-19 pandemic.**

Note: DRGR Project is a collaboration between the Boston University Global Development Policy Center, Heinrich-Böll-Stiftung and the Centre for Sustainable Finance at SOAS University of London.

Northeast Top Tourist Destination in 2022

Why in News?

The year 2022 witnessed record-breaking tourism in the **Northeast Region** having **over 11.8 million domestic visitors** and over 100,000 international travelers.

Why Record-Breaking Tourism in the Northeast?

➢ The Northeast region of India has **a rich cultural heritage and is home to diverse landscapes, including hills, mountains, and valleys.**

➢ The region has been relatively unexplored, but with the recent surge in tourism, more people are discovering the beauty and charm of the Northeast.

➢ It is the result of Government of India's **Destination Northeast India** initiative massive infrastructural push.
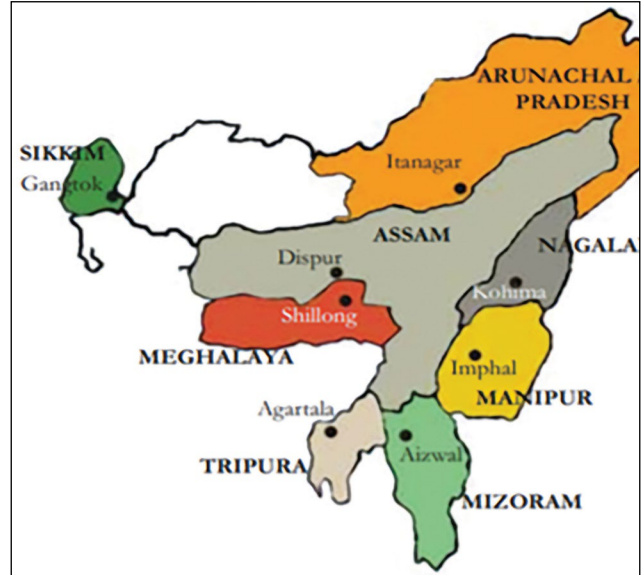
What are the Top Destinations?

➢ **Arunachal Pradesh**:
  ○ **Tawang Monastery:** One of the oldest and largest Buddhist monasteries in India.
  ○ **Namdapha National Park**: Home to diverse flora and fauna, including tigers, flying squirrel and leopards.

➢ **Assam:**
  ○ **Kamakhya Temple:** A revered Hindu temple dedicated to the goddess Kamakhya.
  ○ **Kaziranga National Park**: A **UNESCO World Heritage site** and home to the one-horned rhinoceros.
  ○ **Majuli Island:** Located in the Brahmaputra River, is the largest river island in the world and a cultural hub in Northeast India.

➢ **Manipur:**
  ○ **Loktak Lake:** The largest freshwater lake in Northeast India and home to the floating **Keibul Lamjao National Park.**
  ○ Imphal War Cemetery: A significant religious site for those who lost their lives in the **Second World War.**

➢ **Meghalaya:**
  ○ Nohkalikai Falls: The tallest plunge waterfall in India.
  ○ **Living Root Bridges:** A unique natural wonder created by the Khasi and Jaintia tribes.

➢ **Mizoram:**
  ○ **Phawngpui National Park:** Home to the highest peak in Mizoram and diverse flora and fauna.

Note:

○ **Solomon's Temple:** A unique religious site built by a local pastor, resembling the biblical Temple of Solomon.

➤ **Nagaland:**

○ **Hornbill Festival**: The festival is named after the hornbill bird, which is revered by the Naga tribes as a symbol of their folklore and tradition.

○ **Dzukou Valley:** A picturesque valley known for its stunning landscapes and diverse flora and fauna. Treeless but unbelievably green and floral.

➤ **Sikkim:**

○ **Tsomgo Lake:** A sacred lake considered by local people, it is believed that the water of the lake has medicinal properties. Lake is surrounded by snow-capped mountains and is fed by the melting snow from the mountains

○ **Rumtek Monastery**: A prominent Buddhist monastery and the largest in Sikkim.

➤ **Tripura:**

○ **Neermahal Palace**: A unique palace located in the middle of Rudrasagar Lake, a unique example of a fusion of Hindu and Islamic architectural styles. The palace is designed in the shape of a half-moon and is surrounded by water on three sides.

○ **Unakoti:** A significant religious site featuring **rock-cut sculptures** and **carvings.** The largest sculpture at Unakoti is a **30-foot-high image of Lord Shiva,** known as **Unakotiswara Kal Bhairava**. The site also features several waterfalls and natural rock formations.

What are the Prospects of Tourism in North East India?

➤ **Adventure Tourism:** The Northeast region offers numerous adventure tourism opportunities, including trekking, mountaineering, river rafting, and paragliding.

○ Adventurous sites such as Gangtok, Shillong etc. can attract adventure enthusiasts from all over the world.

➤ **Tribal Communities:** The Northeast is home to several indigenous tribal communities such as **Mismi, Garo, Khasi, Jaintia** etc., each with their **unique culture, language, and traditions.**

○ Tourism can provide an opportunity for these communities to showcase their heritage and generate income.

➤ **Winter Tourism:** The Northeast region **experiences heavy snowfa**ll during the winter months, making it an **ideal destination** for winter tourism.

○ However, this season remains relatively unexplored and has the potential for further development.

➤ **Sustainable Tourism**: To minimize the negative impact of tourism, sustainable tourism practices should be promoted. This includes responsible waste management, promoting eco-friendly accommodations, and respecting the cultural practices of local communities

What are the Benefits and Concern of Tourism in Northeast India?

➤ Benefits

○ Tourism has the potential to **create jobs, generate income**, and boost the **local economy.**

○ As more tourists visit the region, there will be a higher demand for goods and services, leading to the growth of various sectors.

➤ Challenges:

○ **Environmental Impact:** Increased tourism can lead to **increased pollution, littering, and damage to natural habitats,** which can have long-term negative impacts on the environment and wildlife.

○ **Cultural Impact:** Tourism **can lead to changes in traditional cultural practices** and **beliefs**, as well as the commodification of cultural artifacts and practices, which can erode the cultural heritage of local communities.

○ **Connectivity:** Despite recent infrastructural development, the Northeast still faces connectivity challenges. Better road and air connectivity can help attract more tourists to the region.

Foreign Trade Policy 2023

Why in News?

Recently, Union Minister of Commerce and Industry, Consumer Affairs, Food and Public Distribution and Textiles **launched the Foreign Trade Policy (FTP) 2023** which comes into effect from April 1, 2023.

➤ FTP 2023 is a policy document which is based on continuity of time-tested schemes facilitating exports as well as a document which is nimble and responsive to the requirements of trade.

What are Details of FTP 2023?

- **About:**
  - The policy is **based on the principles of trust and partnership** with exporters and **aims at process re-engineering and automation** to facilitate **ease of doing business for exporters.**
- **The Key Approach is based on Four Pillars:**
  - **Incentive to Remission**,
  - Export promotion through collaboration - **Exporters, States, Districts, Indian Missions,**
  - **Ease of doing business**, reduction in transaction cost and e-initiatives, and
  - **Emerging Areas – E-Commerce** Developing Districts as Export Hubs and streamlining **Special Chemicals, Organisms, Materials, Equipment, and Technologies (SCOMET) policy.**
- **Goals and Targets:**
  - The government aims to increase India's overall exports to **USD 2 trillion by 2030**, with equal contributions from the merchandise and services sectors.
  - The government also intends to encourage the use of the **Indian currency in cross-border trade,** aided by a new payment settlement framework introduced **by the RBI in July 2022.**
  - This could be particularly advantageous in the case of countries with which India enjoys a trade surplus.

What are the Salient or Important features of FTP 2023?

- **Process Re-Engineering and Automation:**
  - The policy emphasizes **export promotion and development**, moving away from an incentive regime to a regime which is facilitating, based on technology interface and principles of collaboration.
  - **Reduction in fee structures** and **IT-based schemes** will make it easier for MSMEs and others to access export benefits.
  - Duty exemption schemes for export production will now be implemented through Regional Offices in a rule-based IT system environment, eliminating the need for manual interface
- **Towns of Export Excellence (TEE):**
  - Four new towns, namely **Faridabad, Mirzapur, Moradabad, and Varanasi**, have been designated as TEE in addition to the existing **39 towns.**

- The TEEs will have priority access to export promotion funds under the MAI scheme and will be able to avail **Common Service Provider (CSP)** benefits for export fulfillment under the **Export Promotion Capital Goods (EPCG) Scheme**.
- **Recognition of Exporters:**
  - Exporter firms recognized with 'status' based on export performance will now be partners in capacity-building initiatives on a best-endeavor basis.
  - Similar to the **'each one teach one' initiative, 2-star and above status holders would be encouraged** to provide trade-related training based on a model curriculum to interested individuals.
  - Status recognition norms have been re-calibrated to enable more exporting firms to achieve **4 and 5-star ratings,** leading to better branding opportunities in export markets.
- **Promoting Export from the Districts:**
  - The FTP aims at building partnerships with State governments and taking forward **the Districts as Export Hubs (DEH) initiative** to promote exports at the district level and accelerate the development of grassroots trade ecosystem.
  - Efforts to identify export worthy products & services and resolve concerns at the district level will be made through an institutional mechanism – **State Export Promotion Committee and District Export Promotion Committee** at the State and District level, respectively.
  - **District specific export action plans to be prepared for each district** outlining the district specific strategy to promote export of identified products and services.
- **Streamlining SCOMET Policy:**
  - India is placing more **emphasis on the "export control" regime** as its integration with export control regime countries strengthens.
  - There is a wider outreach and understanding of SCOMET among stakeholders, and the policy regime is being made more robust to implement international treaties and agreements entered into by India.
  - A robust export control system in India **would provide access of dual-use High end goods and technologies to Indian exporters** while facilitating exports of controlled items/technologies under SCOMET from India.

Note:

- ➢ **Facilitating E-Commerce Exports:**
  - ○ Various estimates suggest e-commerce export potential in the range of **USD 200 to USD 300 billion by 2030.**
  - ○ FTP 2023 outlines the intent and roadmap for establishing e-commerce hubs and related elements such as **payment reconciliation, book-keeping, returns policy, and export entitlements.**
  - ○ As a starting point, the consignment wise cap on E-Commerce exports through courier has been raised **from ₹5Lakh to ₹10 Lakh in the FTP 2023.**
  - ○ Depending on the feedback of exporters, this cap will be further revised or eventually removed.
- ➢ **Facilitation under (EPCG) Scheme:**
  - ○ The EPCG Scheme, which allows import of capital goods at zero Customs duty for export production, is being further rationalized. Some key changes being added are:
  - ○ **Prime Minister Mega Integrated Textile Region and Apparel Parks** (PM MITRA) scheme has been added as an additional scheme eligible to claim benefits under CSP(Common Service Provider) Scheme of EPCG.
  - ○ Dairy sector to be exempted from maintaining Average Export Obligation – to support the dairy sector to upgrade the technology.
  - ○ **Battery Electric Vehicles (BEV)** of all types, Vertical Farming equipment, Wastewater Treatment and Recycling, Rainwater harvesting system and Rainwater Filters, and Green Hydrogen are added to Green Technology products – will now be eligible for reduced Export Obligation requirement under EPCG Scheme

- ➢ **Facilitation under Advance authorization Scheme:**
  - ○ Advance authorisation Scheme accessed by DTA (Domestic tariff area) units **provides duty-free import of raw materials for manufacturing export items** and is placed at a similar footing to EOU and **SEZ** Scheme.
  - ○ **Special Advance Authorisation Scheme** extended to export of Apparel and Clothing sector on self-declaration basis to facilitate prompt execution of export orders.
  - ○ **Benefits of Self-Ratification Scheme** for fixation of Input-Output Norms **extended to 2 star** and above status holders in addition to Authorized Economic Operators at present.
- ➢ **Amnesty Scheme:**
  - ○ Under the amnesty scheme, **an online portal will be launched for registration** and a six-month window will be available to exporters to avail the scheme.
  - ○ It will **cover all pending cases of default in export obligation of authorisations,** these can be regularised on payment of all customs duties exempted in proportion to unfulfilled export obligation.

What About Previous Trade Policy?

- ➢ The previous foreign trade policy for **2015-2020** had **targeted exports of USD 900 billion by 2020;**
- ➢ This **target was extended** along with the policy **for three years till March 2023.**
- ➢ India is, however, likely to end 2022-23 with total exports of USD 760-770 billion as against USD 676 billion in 2021-22.

FOREIGN TRADE POLICY 2023

India's Export Goal
- USD 2 trillion by 2030 (incl. services and merchandise exports)
- Current scenario: USD 750+ billion (incl. services and merchandise exports)

4 Pillars of FTP'23
- Incentive to Remission
- Export promotion through collab (exporters, states, districts etc.)
- EoDB, reduction in transaction cost and e-initiatives

Schemes Introduced/Reformed
- Amnesty Scheme
  - ◆ For exporters; close pending authorisations and start afresh
- Towns of Export Excellence Scheme
  - ◆ 4 new TEE declared - Faridabad, Mirzapur, Moradabad and Varanasi (total 43 TEEs now)

Note:

India and Malaysia Agree to Settle Trade in Indian Rupees

Why in News?

 India and Malaysia have agreed to **settle trade in Indian rupees**. This mechanism is expected to enhance India-Malaysia bilateral trade which touched **USD 19.4 billion during 2021-22.**

➢ **Malaysia** is the **third largest trading partner of India in the ASEAN region,** after Singapore and Indonesia that account for **USD 30.1 billion and USD 26.1 billion bilateral trade with India respectively.**

What is the Significance of India's Move to Settle Trade in Indian Rupee?

➢ **About:**
  ○ In **July 2022**, the **Reserve Bank of India (RBI)** allowed the settlement of international trade in Indian rupees.
  ○ In **December 2022**, India saw its first settlement of foreign trade in rupee with Russia – as part of the '**International Settlement of Trade in Indian Rupee'** mechanism initiated by the RBI.
  ○ In **March 2023**, banks from **18 countries were allowed by the RBI to open Special Rupee Vostro Accounts (SRVAs)** to settle payments in Indian rupees.
  ○ It includes: **Botswana, Fiji, Germany, Guyana, Israel, Kenya, Malaysia, Mauritius, Myanmar, New Zealand, Oman, Russia, Seychelles, Singapore, Sri Lanka, Tanzania, Uganda, and the United Kingdom**.

➢ **Benefits of Trading in Indian Rupees:**
  ○ **Controlling Depreciation of Rupees:**
    ● India is a **net importer and the value of the Indian rupee has been declining consistently**.
    ● Using the rupee for international trade transactions will help **check the flow of dollars out of India** and slow the depreciation of the currency albeit to a "very limited extent.
    ● Thus most importantly, the move is expected to **reduce the pressure on India's forex reserves**.
  ○ **Better Pricing for Goods and Services:**
    ● With the ability to invoice trade in Indian rupees, Indian traders can achieve **better pricing for their goods and services**.
    ● Also, this mechanism is expected to benefit both sides of the trade by **reducing currency conversion spreads.**

  ○ **Towards Global Acceptance of Rupees:**
    ● International trade settlements in rupee are expected to gradually contribute to the **global acceptance of the currency,** and later make it possible to **repay loans taken** from fund banks like the Asian Infrastructure Investment Bank.

➢ **Challenges:**
  ○ **Volatility of the Indian Rupee:**
    ● The Indian rupee is known to be **volatile and subject to fluctuations** in the foreign exchange market, which may make it **less attractive as a settlement currency** for some international traders.
  ○ **Complication in Controlling Domestic Supply:**
    ● RBI's report warns that the **'internationalisation' of the rupee can potentially limit the ability of the central bank to control domestic money supply** and influence interest rates as per the domestic macroeconomic conditions.
    ● Ultimately, it may lead to complications in terms of formulating the **monetary policy.**
  ○ **Competition with Other Currencies:**
    ● The Indian rupee may face competition from other major currencies, such as the **US dollar, Euro, and Yen**, which are already widely accepted for international trade settlements.

What is a Vostro Account?

➢ It is an account that **domestic banks hold for foreign banks** in the **former's domestic currency,** in this case, **the rupee.**

➢ Domestic banks use it to provide international banking services to their clients who have **global banking needs.**

➢ The bank holding the Vostro account acts as a **custodian of the foreign bank's funds** and provides various services such as **currency conversion, payment processing, and account reconciliation.**

Conclusion

India's willingness to take **concrete steps towards de-dollarisation of its international trade** and to make the **rupee a tradable currency is a significant step towards internationalisation of rupees.** But India must increase its exports, supported by **critical reforms that include capital account convertibility**, deepening financial markets to manage the **large-scale inflow and outflow of capital**.

International Relations

Highlights

- Conflict between Israel and Syria
- Changing Foreign Policy of Saudi Arabia
- China Taiwan Conflict
- China, Japan Set Up Military Hotline
- U.K. Signed CPTPP
- Finland Joins NATO
- International Court of Justice and Climate Change
- OPEC+ Announces Additional Production Cuts

- The Language Friendship Bridge
- Promoting India's Culture through Foreign Students
- India-Japan Defence Policy Dialogue
- India-Romania Defense Agreement
- India's Role in the Korean War
- Kurmis' Push for ST Status
- Himachal Pradesh Sukhashraya Act, 2023
- Limiting Salt Intake

Conflict between Israel and Syria

Why in News?

Recently, Israel has fired retaliatory rockets after three rockets had been launched towards **Israel from Syria.**

What is theBackground of Recent Conflict between the Two?

➢ The situation in Israel and its neighboring countries has been tense for several months now, with an **ultra-nationalist government coming to power in Israel,** raising concerns among its neighbors.

○ The recent raid on the **Al-Aqsa Mosque** in Jerusalem by Israel sparked **a wave of rocket attacks from Lebanon, Gaza Strip**, and Syria.

➢ Israel fears that **arch-rival Iran is using the long-running war in Syria to station its fighters and weapons** close to Israel's borders.

○ Israel has been conducting strikes in Syria in recent weeks, targeting **both Iranian-linked figures and infrastructure,** including the airports of Damascus and Aleppo.

➢ The situation in the region is complex and volatile, with multiple actors involved and competing interests in the play.

○ The ongoing conflicts have resulted in the **displacement of millions of people** and the loss of countless lives.

○ The international community has called for calm and a peaceful resolution to the conflicts, but the situation remains tense and uncertain.

What is the Timeline of the Conflict between Israel and Syria?

➢ **Six-Day War in 1967:**

○ The conflict between Israel and Syria goes back to the **Six-Day War in 1967**, in which Israel seized the Golan Heights from Syria, which **it has occupied since then.**

● The fertile plateau of the Golan Heights overlooks both Israel and Syria, offering a **commanding military vantage.**

○ In 1973, Syrian forces made an **unsuccessful bid to recapture the area during the Yom Kippur War.** Although a ceasefire agreement was **reached in**

Note:

1974, most of the Golan Heights remains under Israeli control.

- Yom Kippur War, also called the **October War was fourth of the Arab-Israeli wars**, which was **initiated by Egypt and Syria** on the Jewish holy day of Yom Kippur.
- The war eventually **drew both the US and the erstwhile USSR into indirect confrontation** in defense of their respective allies.

➤ **Israel's Golan Heights Law:**

- In 1981, Israel passed the Golan Heights Law, extending its **"laws, jurisdiction and administration" to the area** and effectively annexing it.
- A United Nations Security Council (UNSC) resolution was passed declaring Israel's imposition of law in the occupied Syrian Golan Heights "null and void and without international legal effect".
  - However, it has not changed the situation on the ground, but the **frontier has not seen major hostilities for more than 40 years.**
- In 2000, Israel and Syria **attempted to negotiate a settlement but failed.**

➤ **Syrian Civil War:**

- Israel and Syria's long-standing conflict escalated after the start of the Syrian civil war in 2011.
  - Iran, which **denies Israel's right to exist, emerged as a key player in the conflict** and has been providing weapons, money, and fighters to support the Syrian **President's regime.**
- As a result, rockets sometimes land in Israel as "errant fire" during the fighting in Syria.

➤ **Targeted Strikes in Syria:**

- Israel has been accused of carrying out targeted strikes in Syria in recent years, although it **does not acknowledge them.**
- The recent wave of attacks, however, has raised concerns of an escalation in the conflict, further destabilizing the already volatile region.

What is India's Position in the Conflict?

➤ **India maintains a balanced position in the Syrian Israeli conflict** and has urged all parties to exercise restraint and resolve their differences peacefully through negotiations.

- India has consistently **supported the sovereignty and territorial integrity of Syria** and **called for an end to external interference in its internal affairs.**

➤ **Implications of Conflict for India:**

- The conflict between Syria and Israel could have implications for India, primarily in terms of energy security.
  - India is heavily dependent **on oil imports from the Middle East, including Syria,** and any disruption in the oil supply chain could have a significant impact on the Indian economy.
- The conflict could also have security implications for India, as extremist groups in the region could exploit the situation to further their agenda.
  - India has a significant Muslim population, and any escalation of the conflict could lead to sectarian tensions within the country.

Changing Foreign Policy of Saudi Arabia

Why in News?

Saudi Arabia is making a significant shift in its foreign policy as it moves away from its aggressive stance towards Iran and seeks to create balance between great powers while also transforming its own economy.

How is Saudi Arabia's Foreign Policy Changing?

➤ **Changing Stance Towards Iran:**

- Saudi Arabia's foreign policy had **always centered around Iran**, resulting in proxy conflicts across the region. It's stance, in the past, has always been aggressive towards Iran.
- However, recently Saudi Arabia announced a deal, after China-mediated talks to normalise diplomatic ties with Iran.
  - There has been a **shift from strategic rivalry** and **proxy conflicts to tactical de-escalation** and **mutual coexistence** with Iran.

➤ **Balancing Ties with Global Powers:**

- Saudi Arabia has also been **trying to balance between the US**, its largest arms supplier, Russia, its OPEC-Plus partner, and **China**, the new superpower in the region.

Note:

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How Saudi Arabia is balancing between global powers

Saudi Arabia

Russia
Refused to join sanctions

Supports OPEC+ oil production cuts

U.S.
Ordered a $35 billion Boeing deal

To engage in conditional talks to normalise ties with Israel

China
Iran reconciliation deal

Enhancing trade and defence cooperation
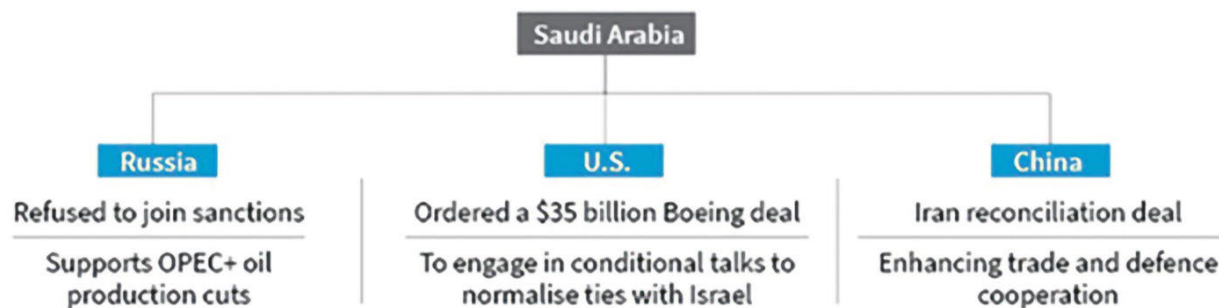
➢ **Reason for Change in Policy:**
  ○ Recent regional bets were **either unsuccessful or only partially successful**.
    ● **Failed** regional policies such as for Syria and Yemen, where the Saudi intervention **failed to deter** the Iran-backed **Houthi rebels.**
    ● Also, the Houthis, with their drones and short-range missiles, now pose a serious security threat to Saudi Arabia.
  ○ The **US's priority is shifting** away from West Asia.
    ● US's deprioritisation of West Asia, making Saudi Arabia realise that it needs to establish its own autonomy by building loyal alliances with other great powers.
  ○ **China**, which has good ties with both Iran and Saudi Arabia, **offered to mediate** between the two, and the Saudi seized the opportunity.
➢ **Implications on US-Saudi Relations:**
  ○ Saudi's changing foreign stance, however, does not mean that it is moving away from the US.
    ● The country **remains Saudi Arabia's largest defence supplier** and plays a major security role in the region.
      ■ Saudi Arabia is also trying to **develop advanced missile and drone capabilities to counter Iran's edge** in these areas **with help from the US and others.**
    ● It is rather, just trying to use the vacuum created by the U.S. policy changes to autonomize its foreign policy.
  ○ **US' Response:** Though the U.S. has publicly welcomed the Saudi-Iran rapprochement, it **raised** its concerns to the Crown Prince of Saudi about being "blindsided" on the Iran deal.
    ● The **US largely remained as a spectator in China and Russia led mediation talks**, especially considering its huge military presence in the region and the fact that the US had been part of almost all major realignments.

How will Saudi's Changing Policy Affect the Region?

➢ Saudi Arabia's talks with Syria and the Houthis are part of a **bigger picture of Saudi-Iran rapprochement.**
  ○ Ending the Yemen war through a settlement with the Houthis would **give Saudi a calmer border** and **allow Iran to retain influence in Saudi's backyard.**
➢ These agreements could **bring some stability across the Gulf,** but tensions between Israel and Iran could impact this.

Note:

➢ **Saudi also needs to maintain autonomy without irking the US**, who may not be happy with Syria being re-accommodated into the West Asian mainstream.

What is at Stake for India?

➢ Saudi Arabia is an important player in the Middle East, and **any significant changes in its foreign policy could impact India's relations with other countries** in the region.

  ○ It can **lead to creation of China-Pakistan-Saudi Arabia**.

➢ India maintains cordial relations with both Iran and Saudi Arabia and plays a role in maintaining peace and stability in the region.

  ○ Normalizing ties between these two countries could **help India in its efforts to promote peace and security in the region.**

➢ However, **Chinese mediation** between Iran and Saudi **will create challenges for India** as it will contribute to **increasing Chinese influence** in the region.

○ India **needs to be vigilant** about the increasing Chinese influence in the region and **work towards securing its strategic interests** in the Middle East.

China Taiwan Conflict

Why in News?

China has announced that it is prepared to fight against any attempt to achieve Taiwan's independence or any foreign interference.

➢ China conducted **military exercises simulating a "seal off" of Taiwan**, in response to the visit of Taiwan's President to the United States.

➢ Largely unrecognized by other nations, **Taiwan sees itself as a sovereign country.** However, China considers it to be a breakaway state and is determined to bring the island under its control.
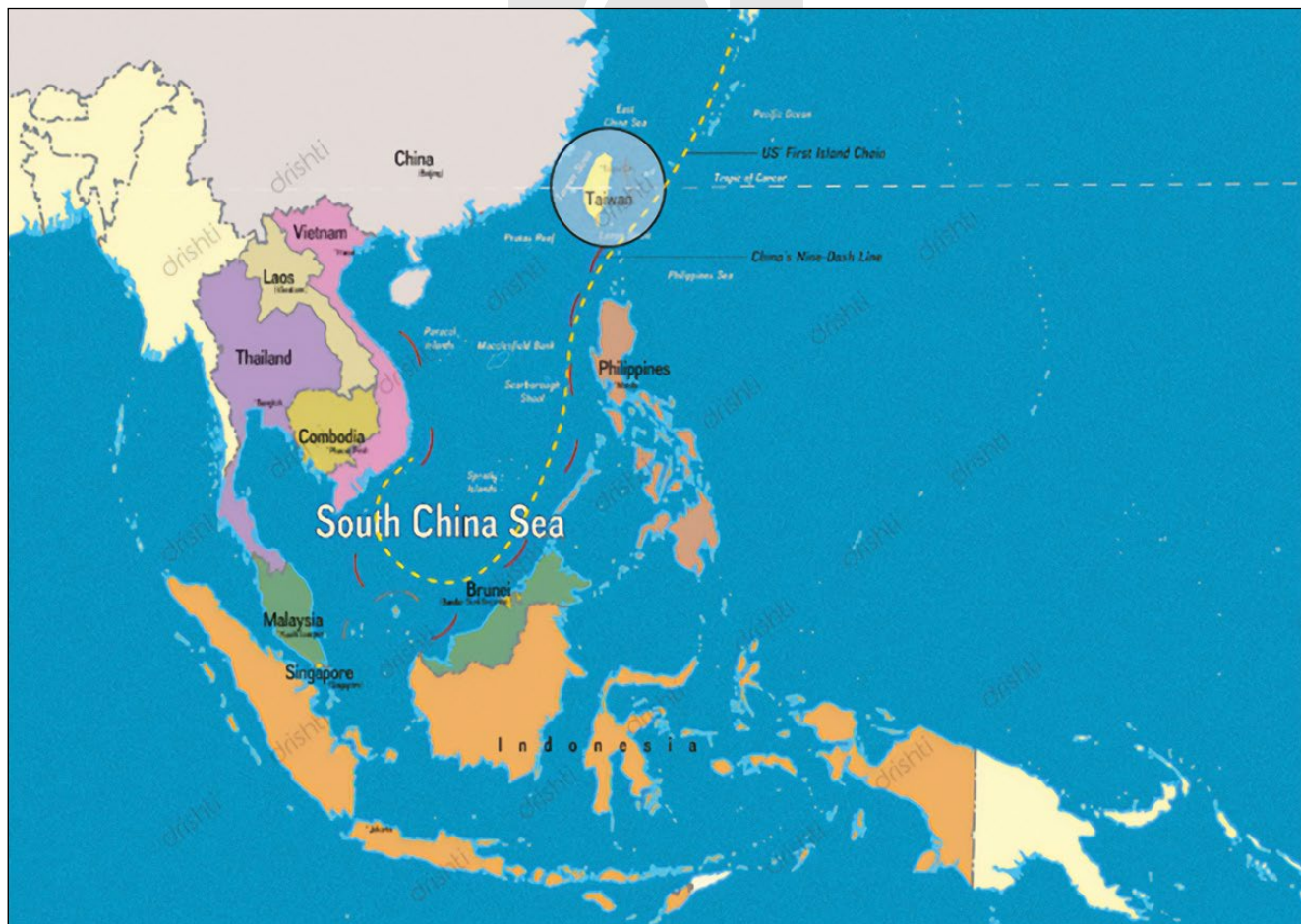
Note:

What is the Point of Contention?

➢ **Background:**

○ Taiwan came under Chinese control **during the Qing dynasty but** was given to Japan after **China lost the first Sino-Japanese war in 1895.**

○ China regained control of Taiwan in **1945 after Japan lost World War II,** but the civil war between the nationalists and communists led to the nationalists fleeing to Taiwan in 1949.

○ The Kuomintang party, led by Chiang Kai-shek, ruled Taiwan for many years and is still a prominent political party. China claims **Taiwan as a Chinese province, but Taiwan argues that it was never part** of the People's Republic of China (PRC).

○ Currently, only 13 countries recognize Taiwan as a sovereign country due to China's diplomatic pressure.

● The US backs Taiwan's independence, maintains ties with Taipei, and sells weapons to it — but officially subscribes to PRC's "**One China Policy**", which means there is only one legitimate Chinese government

➢ **Escalation:**

○ In the 1950s, the PRC bombed islands under Taiwan's control, drawing in the **US, which passed the Formosa** (Old Name of Taiwan) **Resolution** to defend Taiwan's territory.

○ In 1995-96, China's testing of missiles in the seas around Taiwan led to the **biggest US mobilization in the region** since the **Vietnam War.**

➢ **Recent Developments:**

○ The 2016 election of President Tsai marked the beginning of a sharp **pro-independence phase in Taiwan,** which has been intensified by her re-election in 2020.

○ The island now has significant economic interests, including investments in China.

○ Pro-independence groups worry that **this economic dependence may hinder their goals,** while pro-reunification groups in Taiwan, as well as China, hope that increasing people-to-people contacts will eventually wear down the pro-independence lobbies.

○ Taiwan has been able to maintain its independence, but the situation remains volatile. As Taiwan continues to develop economically, it is **likely that tensions will continue to rise between China and Taiwan,** making it crucial to monitor the situation in the region closely.

What is the Strategic Significance of Taiwan?

➢ Taiwan is situated in a strategically important location in the **western Pacific Ocean**, adjacent to China, Japan, and the Philippines. Its location provides a **natural gateway to Southeast Asia and the South China Sea**, which are critical for global trade and security.

➢ It is a major **producer of high-tech electronics, including semiconductors,** and is home to some of the world's largest technology companies.

○ Taiwan produces over **60% of the world's semiconductors** and over 90% of the most advanced ones.

➢ Taiwan has a **modern and capable military that is focused on defending its sovereignty and territorial integrity.**

➢ Taiwan is a major focus of regional and global geopolitics, with the potential to influence the balance of power in the Asia-Pacific region and beyond.

What is the US' Interest in Taiwan?

➢ Taiwan anchors a chain of islands which includes a list of **US-friendly territories** that the US is planning to use as a place of leverage for countering China's expansionist plans.

➢ The US does not have official diplomatic ties with Taiwan but is bound by US **law (Taiwan Relations Act, 1979)** to provide the island with the means to defend itself.

➢ It is by far the largest arms dealer for Taiwan and follows a **'strategic ambiguity' policy.**

What has been the Stand of India on the Taiwan Issue?

➢ **India-Taiwan Ties:**

○ India-Taiwan Ties have been gradually improving over the years, as a part of **India's Act East Foreign Policy.** India has sought to cultivate extensive ties with Taiwan in trade and investment, as well as developing cooperation in science & technology, environment issues, and people-to-people exchange.

Note:

○ Despite not having formal diplomatic relations, India and Taiwan have maintained **representative offices in each other's capitals since 1995 that function as de facto embassies.** These offices have facilitated high-level visits and helped deepen the economic and cultural ties between the two countries.

➤ **One China Policy:**

○ India follows the One China policy which recognizes Taiwan as part of China.

○ However, India also expects **China to recognize India's sovereignty over territories like Jammu and Kashmir.**

○ India has recently stopped mentioning its adherence to the **One China policy.** Although **India's engagement with Taiwan is restricted due to its ties with China**, it sees Taiwan as an important economic partner and strategic ally.

○ India's increasing ties with Taiwan are viewed as a move to counter China's growing influence in the region.

China, Japan Set Up Military Hotline

Why in News?

Recently, China and Japan set up military hotlines (a direct phone line set up for a specific purpose) to manage maritime, air incidents over disputed islands (Senkaku Island).

➤ China and Japan **have a long-festering dispute over uninhabited East China Sea** islands controlled by Japan but claimed by China.

Why was the Hotline Established?

➤ This move was made to strengthen their capability of managing and controlling incidents arising due to their aggressive patrolling of the disputed waters.

➤ The **hotline will enrich** the **communication channels** between the defence departments of China and Japan, strengthen the capabilities of the two sides to manage and control maritime and air crises, and help maintain regional peace and stability.

➤ This move will further **maintain regional peace and stability.**

What is the Senkaku Island Dispute?

➤ **About:**

○ The Senkaku Island dispute concerns a territorial dispute over a group of uninhabited islands known as:

- **Senkaku** Islands **in Japan**,
- **Diaoyu** Islands **in China**, and
- **Tiaoyutai** Islands **in Taiwan**.

○ Both Japan and China claim ownership of these islands.

➤ **Location:**

○ Eight uninhabited islands **lie in the East China Sea**. They have a **total area** of **about 7 sq km** and lie northeast of Taiwan.

➤ **Strategic Importance:**

○ Islands are close to strategically **important shipping lanes**, offer **rich fishing grounds** and are thought to contain **oil deposits.**

➤ **Japan's Claim:**

○ After World War II, Japan renounced claims to a number of territories and islands including Taiwan in the 1951 **Treaty of San Francisco**.

○ But under the treaty, the Nansei Shoto islands came under USA trusteeship and were then returned to Japan in 1971.

○ Japan says that Senkaku islands are part of the Nansei Shoto islands and hence they also belong to Japan.

○ Besides, **China raised no objection**s **to the San Francisco dea**l.

○ **Only since 1970s**, when the issue of oil resources in the area emerged, **Chinese and Taiwanese authoritie**s began pressing their **claims.**

Note:

➢ **China's Claim:**
  ○ These Islands have been part of its territory since ancient times, serving as important fishing grounds administered by the province of Taiwan.
  ○ When Taiwan was returned in the **Treaty of San Francisco,** China said the islands as part of it – should also have been returned.
➢ **Taiwan Claims:**
  ○ Taiwan claims the islands **but has forged agreements** with Japan to avoid any conflict as Japan maintains close defence ties with Taipei.
  ○ Despite the ongoing dispute, Japan maintains close defence ties with Taiwan.

Other Recent Island Disputes:

➢ Kuril Island: Located in North Pacific Ocean.
  ○ Dispute is between Russia and Japan
➢ The Chagos archipelago: Located in North Indian Ocean.
  ○ Dispute is between Britain and Mauritius.

U.K. Signed CPTPP

Why in News?

Recently, the U.K. Signed the **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**. Prime Minister of U.K cited the agreement's success as an example of **"post-Brexit freedoms".** The agreement will now need to be ratified by Westminster and each of the CPTPP countries.

What is CPTPP?

➢ **About:**
  ○ The **CPTPP** is a **Free trade agreement (FTA)** between **Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, Peru, New Zealand, Singapore and Vietnam.**
  ○ The CPTPP was signed by the **11 countries on 8 March 2018 in Santiago, Chile.**

CPTPP Member (Eleven Member Countries)
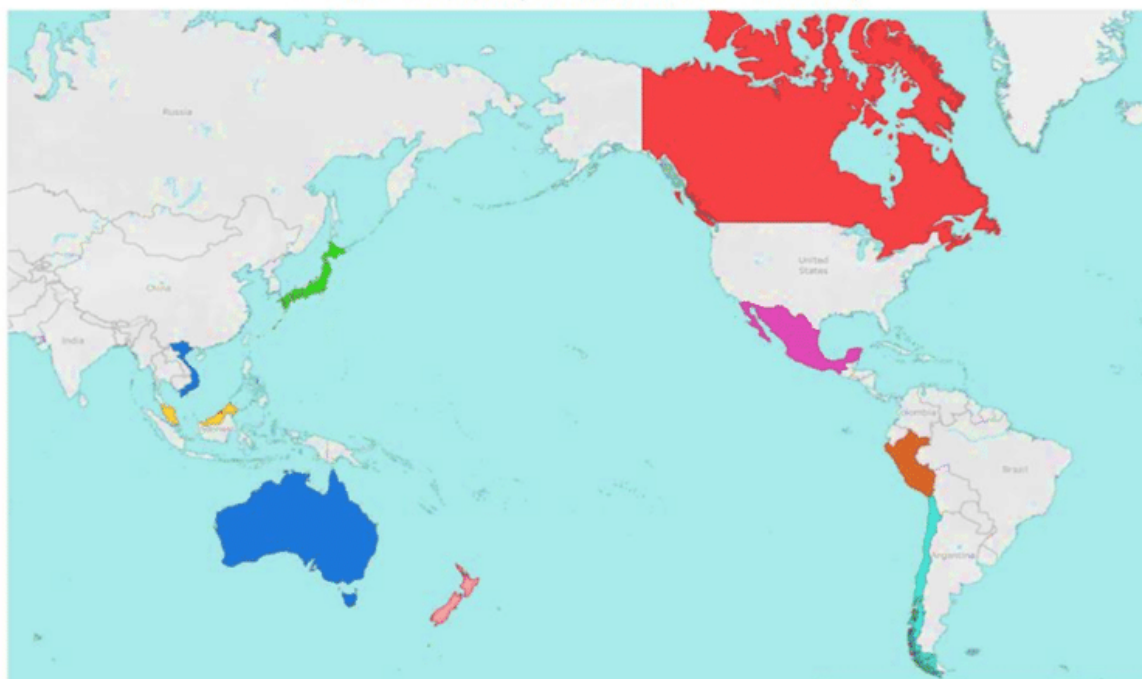
CPTPP Member Countries
- Australia
- Brunei Darussalam
- Mexico
- New Zealand
- Vietnam
- Chile
- Japan
- Malaysia
- Peru
- Singapore
- Canada

Source: Authors Illustration with Ministry of Trade and Industry of Singapore, 2021

Note:

> **Background:**
> - In 2005, a trade agreement between a small group of Pacific Rim countries comprising Brunei, Chile, New Zealand, and Singapore led to the formation of **Transpacific Partnership (TPP) consisting of 12 nation-states**.
> - After the withdrawal of the US, **the remaining eleven signatories, known as the TPP-11,** continued talks and their efforts led to the **formation of CPTPP.**

> **Significance:**
> - CPTPP **removes 99% of tariffs on goods and services**, just like the original TPP did, all the member countries have agreed to **cut down on wildlife trafficking**. That helps elephants, rhinoceroses, and marine species the most.
> - It prevents environmental abuses, such as unsustainable logging and fishing. Countries that don't comply will face trade penalties.

Note: All 11 countries of CPTPP are also members of the **Asia-Pacific Economic Cooperation (APEC).**

What is Brexit?

> **About:**
> - **Brexit** refers to the U.K.'s decision to leave the **European Union (EU)**. The country formally left the EU in January 2020, after a referendum in 2016.

> **Impact of Brexit on the U.K.:**
> - The impact of Brexit on the U.K. has been significant. Some of the impacts of Brexit include:
>   - Changes in trade policies and tariffs with the EU and other countries.
>   - Reduced access to the EU market for U.K. businesses.
>   - Increased regulatory burden on U.K. businesses trading with the EU.

What are the Benefits of the CPTPP for the U.K.?

> More than 99% of British exports, including key markets such as cheese, cars, chocolate, machinery, gin, and whisky, **will have zero tariffs**.

> The deal is expected to add GBP 1.8 billion (USD 2.2 billion) annually to the U.K. economy in the long run, a modest boost of 0.08% to GDP.

> The **CPTPP is a "gateway" to the Indo-Pacific region**, which is expected to account for a majority (54%) of global economic growth in the future.

> As a CPTPP member, the **U.K. will have a veto on whether China joins the treaty.** U.K. firms will not need to establish a local office or be resident to provide services and will be able to operate on a par with firms in host countries.

What is India's Stand on CPTPP?

> **India did not join CPTPP** as **it seeks to place greater labor and environmental standards** on its other partners and **CPTPP draft includes narrowly detailed qualifications on standards for investment protection, provisions** to protect the host state's right to regulate, and the imposition of detailed transparency requirements.

Finland Joins NATO

Why in News?

Finland has officially joined **NATO** after its application was ratified in record time. This move was **supported by the majority of NATO members,** who believed that Finland's membership would enhance the **alliance's strength in the Baltic area.**

> However, Sweden's path to NATO membership remains **blocked by Turkey and Hungary.**

What is the Background and Impact of Finland Joining NATO?

> **Background:**
> - **Finland has joined NATO due to Russia's invasion of Ukraine,** which has made its smaller neighbors feel the need for the powerful military backing that NATO provides. Finland and Sweden applied for NATO membership after the invasion.
> - Finland which shares a 1,340-km border with Russia, has ended more than 70 years of military non-alignment — in fact, in the Cold War years, **a policy of neutrality between the Soviet Union and the West was known as 'Finlandisation',** and Finlandisation had been one of the options discussed for Ukraine before Russia invaded it.

- ➤ **Impacts of Joining NATO:**
  - ○ Finland has **gained better security, but it is losing out on significant trade and tourism revenue it was making from Russia,** and its status as a confidence-building presence in the Baltic Sea and Europe at large is being threatened.
  - ○ For NATO, the **addition of Finland brings in a military trained to repel an attack from Russia and strengthens its position to station weapons closer to Russia.**
    - ● However, Russia sees this as a dangerous historical mistake that could escalate the Ukraine conflict and has said it **will strengthen its military capacity in its west and northwest.**

What is NATO?

- ➤ **About:**
  - ○ **NATO, or the North Atlantic Treaty Organization**, is a political and military alliance consisting of **31 member countries**.
  - ○ It was formed in **1949** to promote **mutual defence and collective security among its members.**
- ➤ **Members:**
  - ○ In 1949, there were 12 founding members of the Alliance: **Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States.**
  - ○ Since then, **19 more countries** have joined the Alliance: Greece and Turkey (1952); Germany (1955); Spain (1982); Czechia, Hungary and Poland (1999); Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia and Slovenia (2004); Albania and Croatia (2009); Montenegro (2017); North Macedonia (2020); and **Finland (2023).**
- ➤ **Headquarters: Brussels, Belgium.**
  - ○ **Headquarters of Allied Command Operations: Mons, Belgium**.
- ➤ **Special Provision:**
  - ○ **Article 5:** Article 5 of the NATO treaty is a key provision that **states that an attack on one member is an attack on all members**.
    - ● This provision has **only been invoked once, after the 9/11 terrorist attacks** in the United States.
  - ○ However, NATO's protection does not extend to members' **civil wars or internal coups.**

- ➤ **Alliances of NATO:**
  - ○ **Euro-Atlantic Partnership Council (EAPC)**
  - ○ **Mediterranean Dialogue**
  - ○ **Istanbul Cooperation Initiative (ICI)**

International Court of Justice and Climate Change

Why in News?

The **United Nations General Assembly (UNGA)** has asked the **International Court of Justice (ICJ)** by passing a **Resolution** to give its opinion on countries' obligations towards Climate Change based on the **U.N. Framework Convention for Climate Change (UNFCCC).**

- ➤ The resolution was pushed through by **one of the smallest countries** in the world, the Pacific Island of Vanuatu, an island that was devastated in **2015 by the effects of Cyclone Pam**, believed to have been spurred by climate change, that wiped out 95% of its crops and affected two-thirds of its population.

Note:

What does the Resolution Seek?

➢ The UNGA asked the ICJ to answer two questions,

  ❍ What are the obligations of states under international law to ensure the protection of the climate system for present and future generations?

  ❍ What are the **legal consequences under these obligations** for states where they, by their acts and omissions, have caused significant harm to the climate system, particularly for Small Island Developing States (SIDS) and for people who are harmed.

➢ The resolution **refers to international agreements** like the **Paris Agreement and the United Nations Convention on the Law of the Sea (UNCLOS).**

➢ The ICJ will take around **18 months to give its opinion.**

What is India's Position?

➢ India has not taken a clear stance on the UN resolution, but it **generally supports climate justice** and accountability for **Global Warming.**

➢ The Indian government has referred the resolution to legal authorities to assess its implications and international ramifications.

➢ India has updated its **NDC (Nationally Determined Contributions)** commitments and plans to source half its electricity from renewable sources by 2030, but it did not co-sponsor the draft resolution.

➢ India is closely watching how major powers like the **U.S. and China respond to the resolution,** as their support is crucial for its implementation.

➢ India has emphasized that the ICJ process can only address climate change issues broadly and cannot **name or profile any one country,** also stressing that any attempt to impose an opinion in **a "top-down" manner would be resisted.**

Is the Advisory Opinion of the ICJ Binding?

➢ The advisory opinion of the ICJ would not be **legally binding as a judgment,** but it would carry **legal weight and moral authority.**

➢ It could provide important clarification on international environmental laws and **streamline the process for issues related to climate finance**, climate justice, and the loss and damages fund at the COP process.

➢ Past advisory opinions given by the ICJ, such as those on the Palestinian issue and the dispute between the U.K. and Mauritius over the **Chagos Islands, have been respected.**

What is the United Nations Framework Convention on Climate Change?

➢ UNFCCC was signed in 1992 at the United Nations Conference on Environment and Development also known as the Earth Summit, the Rido Summit or the Rio Conference.

  ❍ India is among the select few countries to have hosted the COP of all three Rio conventions on climate change (UNFCCC), biodiversity (CBD) and land **(United Nations Convention to Combat Desertification).**

➢ The UNFCCC entered into force in 1994 and has been ratified by 197 countries.

➢ It is the parent treaty of the **2015 Paris Agreement. It is also the parent treaty of the** 1997 Kyoto Protocol.

➢ The UNFCCC secretariat (UN Climate Change) is the United Nations entity tasked with supporting the global response to the threat of climate change. It is located **in Bonn, Germany.**

➢ Its objective is to achieve **stabilisation of greenhouse gas concentrations in the atmosphere** at a level that would prevent dangerous repercussions within a time frame so as to allow ecosystems to adapt naturally and enable sustainable development.

OPEC+ Announces Additional Production Cuts

Why in News?

The **Organization of the Petroleum Exporting Countries (OPEC)** and its allies, collectively known as **OPEC+**, announced a **surprise reduction of 1.16 million barrels per day (bpd) in their oil production** to support market stability.

What is the Background of Voluntary Cut in Oil Production?

➢ **Background:**

  ❍ Oil prices skyrocketed after the **Russia-Ukraine Conflict** and have been fluctuating in recent months, with a drop towards **USD 70 per barrel** in March 2023 due to concerns of a **global banking crisis** that could hit demand.

➢ **Countries Involved:**

  ❍ **Till yet, Saudi Arabia, Iraq, UAE, Kuwait, Oman, Algeria, Kazakhstan, Russia and Gabon** announced a voluntary oil output cut.

  ❍ However, not all OPEC+ members are joining the voluntary cuts, as some are already pumping well below agreed levels due to a **lack of production capacity.**

What will be the Major Impacts of Voluntary Cut in Oil Production?

➢ **Impact on the U.S:** The move is likely to be highly detrimental to the US, which has repeatedly **asked the organisation to increase oil production.**

➢ **Impact on Non-OPEC Countries:** The production cuts could have an impact on non-OPEC countries that rely on oil exports, as they may face **increased competition in the market.**

➢ **Impact on India:** India imports nearly **85% of its crude requirement**, the oil import **bill will rise on account of the rise in prices due to decreased production.**

  ❍ The rise in import bills will not only lead to inflation and a rise in the **Current Account Deficit (CAD) and fiscal deficit** but also weaken the rupee against the dollar and hurt stock market sentiment.

  ❍ As per **Investment Information and Credit Rating Agency (ICRA)**, for every USD 10 per barrel increase in the price of the Indian crude oil basket, the CAD could widen by **USD 14-USD 15 billion, or 0.4% of GDP.**

What is OPEC+?

➢ **OPEC:** Established in 1960 by founding members **Iran, Iraq, Kuwait, Saudi Arabia and Venezuela,** OPEC has since expanded and now has **13 member states.**

  ❍ Member countries are: **Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates, Venezuela.**

    ● **Headquarter:** Vienna, Austria.

  ❍ OPEC produces about **40% of the world's crude oil** and its members' exports make up around **60% of global petroleum trade.**

➢ **OPEC+:** In 2016, with the addition of another **10 allied major oil-producing countries, the OPEC is known as OPEC+.**

  ❍ OPEC+ countries include 13 OPEC member countries and **Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan.**

➢ **Objective:**

  ❍ The objective of the organisation is to "**coordinate and unify the petroleum policies of its Member Countries** and ensure the **stabilisation of oil markets in order to secure an efficient, economic and regular supply** of petroleum to consumers, a steady income to producers and a fair return on capital for those investing in the petroleum industry.

WORLD
OPEC Member Countries

Note:

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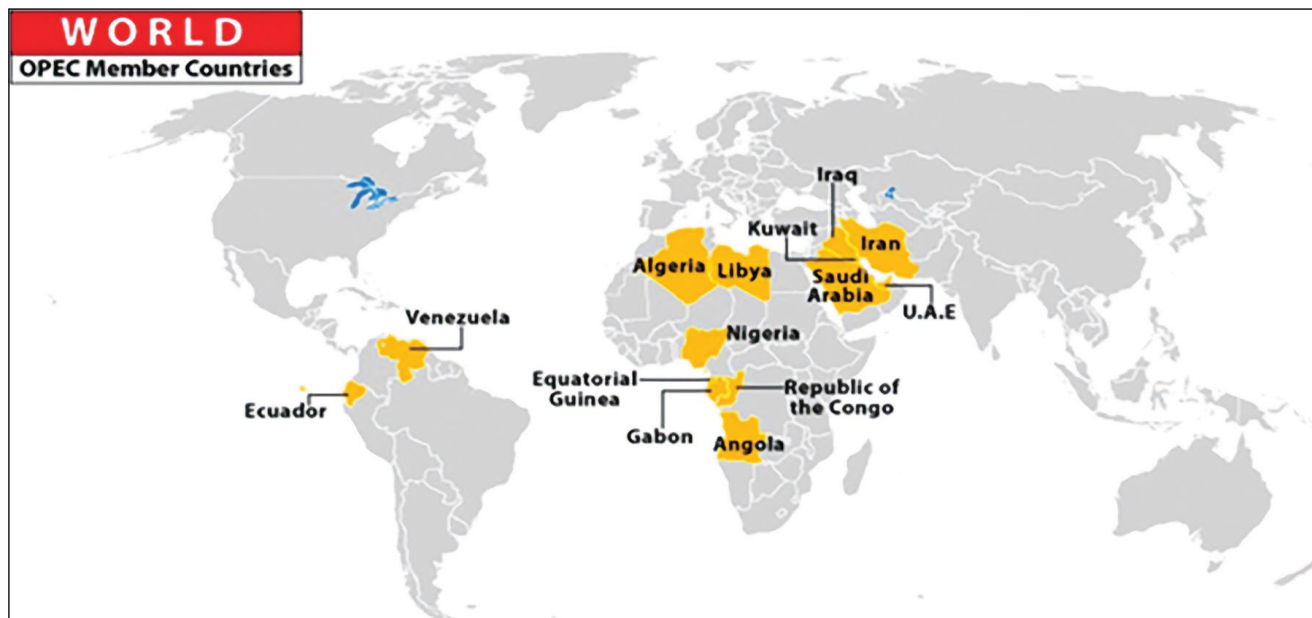
The Language Friendship Bridge

Why in News?

The **Indian Council for Cultural Relations (ICCR)** has envisaged a project called **'The Language Friendship Bridge'**, which aims to expand cultural footprint in neighborhoods with whom India has historical ties.

➢ The project aims to enable India to translate its epics and classics, as well as contemporary literature, into these languages **so that people in both countries can read them.**

What is the Project about?

➢ **About:**
  ○ The Project will create a pool of experts in languages spoken in countries like **Myanmar, Sri Lanka, Uzbekistan and Indonesia** to facilitate better **people-to-people exchanges.**
  ○ It will train five to 10 people in the official languages of each of these countries.
    ● As of now, the ICCR has zeroed in on 10 languages: Kazakh, Uzbek, Bhutanese, Ghoti (spoken in Tibet), Burmese, Khmer (spoken in Cambodia), Thai, Sinhalese and Bahasa (spoken in both Indonesia and Malaysia).
  ○ Though a number of universities and institutes offer courses in these languages, only a handful teach any of the **10 languages on the ICCR list.**
    ● Sinhala, for example, is taught at the **Banaras Hindu University and the School of Foreign Languages (SFL)** under the Ministry of Defence.
➢ **Significance:**
  ○ The project is significant for India's foreign policy and cultural diplomacy, as it will help **deepen India's cultural and economic relations** with these countries.
  ○ By training language experts in the official languages of these countries, **India will be able to communicate more effectively and build stronger cultural** and economic ties with its neighbors.
  ○ It is also particularly important in the **current geopolitical context,** as India is looking to strengthen its relations with its neighboring countries to counter **China's growing influence in the region.**

  ○ By promoting cultural exchanges, India can build stronger people-to-people relations with these countries, which **can help to counter the negative impact of Chinese economic and strategic initiatives** in the region.

What is ICCR?
➢ The ICCR is an autonomous organisation of the Government of India under the Ministry of External Affairs.
➢ It promotes **cultural diplomacy through cultural exchange** with other countries.
➢ It was founded in **1950 by India's first Education Minister, Maulana Abul Kalam Azad.**
➢ ICCR has been assigned the responsibility of facilitating the celebration of the **International Day of Yoga** by Indian Missions/Posts abroad since 2015.
➢ ICCR has instituted several awards, including the **Distinguished Indologist Award,** World Sanskrit Award, Distinguished Alumni Award, and Gisela Bonn Award, which are conferred upon foreign nationals for their contributions in different fields.

What are the Challenges?

➢ One of the major challenges is the **lack of infrastructure and trained teachers** in India to teach these languages. The project will require **significant investment in setting up language centers** and training teachers to teach these languages effectively.

➢ Additionally, the project will require significant **resources to provide scholarships to Indian students to study these languages** in the countries where they are spoken.

➢ Moreover, the project also faces the challenge of expanding the current list of languages, as there are several neighboring countries where India has significant cultural and economic ties, and **whose languages are not currently included** in the project.

Promoting India's Culture through Foreign Students

Why in News?

The **Indian Council for Cultural Relations (ICCR)** plans to expand **India's cultural footprint** globally by utilising th**e experiences of foreign students studying in India.**

Note:

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➢ This **"soft power diplomacy"** is meant to spread the India story when **students go back to their home countries.**

What are the Initiatives of ICCR To Expand India's Cultural Footprints?

➢ The **ICCR** will start **E-3 or Exit Engagement Evenings** with foreign students 3 to 4 months before they finish their courses in **various Central and State universities, institutes, and agricultural colleges of the country.**
  ○ After the engagement evenings, the students are sure to go back and promote **Indian heritage** and aspects of its unique culture.
➢ The engagements would also include visits to places of national importance. The ICCR has zeroed in on the **Khadi Commission**, the **Indian Tourism Development Corporation,** and the **Department of AYUSH** to hold these evenings with the students.
➢ The ICCR has also launched a website called the **India Alumni Portal in April 2022** as a platform to **connect with foreign students around the world who have studied in India**.

What is the Current Status of Foreign Students Enrolling in India?

➢ The number of foreign students enrolled in Indian higher education institutions was **48,035 in 2020-21, a marginal dip from 49,348 in 2019-20**, according to the latest **All India Survey on Higher Education (AISHE)** brought out by the Ministry of Education.
➢ People from more than **160 countries visit India** to study, with **Nepal, Afghanistan, Bangladesh, the U.S., the UAE, Bhutan, Sudan, Nigeria, Tanzania, and Yemen** being the countries from which the majority of the students came.

What are the Functions of Indian Council for Cultural Relations?

➢ **About:**
  ○ The ICCR is an **autonomous organisation** of the Government of India under the Ministry of External Affairs.
  ○ It was established in **1950 with the aim of promoting Indian culture** and its **values abroad** and **fostering cultural exchanges between India and other countries.**

➢ **Functions:**
  ○ Organising **cultural festivals, performances, exhibitions**, and lectures in India and abroad.
  ○ Granting **scholarships to foreign students** to study in India.
  ○ Offering courses in **Indian music, dance, yoga, and languages.**
    ● ICCR has been assigned the responsibility of facilitating the celebration of the **International Day of Yoga** by Indian Missions/Posts abroad since 2015.
  ○ Collaborating with international organisations, cultural institutions, and foreign governments to promote cultural exchanges.
➢ **Awards:**
  ○ Distinguished Indologist Award, World Sanskrit Award, Distinguished Alumni Award – Citation and Plaque and Gisela Bonn Award.

India-Japan Defence Policy Dialogue

Why in News?

Recently, the **7th India-Japan Defence Policy Dialogue** was co-chaired by Defence Secretary of India and the Vice Minister of Defense for International Affairs of Japan in New Delhi.

What are the Key Details of Dialogue?

➢ **About:** The Defence Policy Dialogue is an institutionalized mechanism between India and Japan to discuss bilateral defence cooperation.
  ○ The purpose of the meeting is to **discuss a wide range of issues** related to **defence cooperation** between the two countries.
➢ **Highlights of the 7th Dialogue:**
  ○ The two countries discussed Service-level exercises and engagements, regional security issues and cooperation in **defence equipment & technology.**
    ● The **Japanese** Vice Minister **presented policy updates** from their recently released National Security Strategy and National Defense Strategy.
  ○ Both countries appreciated the **growing cooperation** between the **Services through Staff talks and exercises.**

Note:

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○ They welcomed the conduct of the inaugural fighter exercise '**Veer Guardian**' between the **Indian Air Force and Japanese Air Self Defence Force** in January 2023 **in Japan**.

- The Defence Secretary emphasized that both the countries should aim to deepen collaboration between the respective **defence industries**,
- Japanese defence industries were invited for investment in India under the **'Make in India' initiative.**

○ Both sides agreed to diversify cooperation in new and emerging domains like **defence space and cyber**.

How are India's Relations with Japan?

➤ **Defence Cooperation:** Japan is one of the few countries with whom India has **2+2 ministerial dialogue**

○ India and Japan's forces also organize a series of bilateral exercises such as:

- **JIMEX** (naval), **Malabar exercise** (Naval Exercise), '**Veer Guardian**' and **SHINYUU Maitri** (Air Force), and **Dharma Guardian** (Army).

➤ **Common Groupings:**

○ Both India and Japan are members of **Quad**, **G20** and **G-4**, **International Thermonuclear Experimental Reactor (ITER).**

○ **India-Japan Act East Forum** was established in 2017 which aims to provide a platform for India-Japan collaboration under the rubric of India's "**Act East Policy**" and Japan's "Free and Open Indo-Pacific Strategy".

➤ **Investment and ODA:**

○ India has been the largest recipient of the Japanese **Official Development Assistance (ODA)** Loan for the past decades for.

- Delhi Metro is one of the most successful examples of Japanese cooperation through the utilization of ODA.

○ **India's Western Dedicated Freight Corridor (DFC)** project is funded by a soft loan provided by Japan International Cooperation Agency.

- Japan and India had committed to build a High-Speed Railways in India.

➤ **Economic Relations:** Japan's bilateral trade with India totaled US$ 20.57 billion during FY 2021-22. India was the 18th largest trading partner for Japan, and Japan was the 12th largest trading partner for India in 2020.

➤ **India-Japan Digital Partnership: Discussion** is going on for the "**India-Japan Digital Partnership**" with a view to enhancing the digital economy through the promotion of joint projects in the area of **IoT (Internet of Things)**, **AI (Artificial Intelligence)** and other emerging technologies.

○ Japan is looking forward to attracting more highly skilled Indian IT professionals to contribute to the Japanese ICT sector.

➤ **Strategic Clean Energy Partnership:** For cooperation in areas such as electric vehicles, storage systems including batteries, electric vehicle charging infrastructure, development of solar energy, hydrogen, ammonia, etc.

○ Along with Digital Partnership, it was also announced at the **14th India-Japan Annual Summit**

What are the Challenges Related to Defence Cooperation?

➤ **China Factor:** While both countries have sought to strengthen their relationship as a counterbalance to China's influence, their approaches to dealing with China have differed.

○ India has been more vocal in criticizing China's actions, while Japan has been more cautious in its approach.

➤ **Defence Exports:** India is looking to export defence equipment to other countries, which could potentially compete with Japan's own defence exports.

➤ **Influence of US-China Rivalry:** The intensification of **Chinese-American rivalry** contributes to disturbance of **regional security** in **the Indo-Pacific.**

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India-Romania Defense Agreement

Why in News?

Recently, India and Romania have signed the **Defense Cooperation Agreement**, aiming to set up and expand Military Cooperation between both countries.

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What is the Agreement About?

➢ The agreement will provide the **legal framework for future cooperation in the field of defense** through the exchange of expertise and knowledge on subjects of mutual interest including **co-development and co-production of military hardware.**

➢ The agreement will promote cooperation in the field of defense between both countries and open up enormous opportunities in sectors like **defense medicine, scientific research, cyber defense, technology** and research and development.

What is the Significance of the Agreement?

➢ The **EU (European Union)** Strategy for cooperation in the **Indo-Pacific** is an opportunity to strengthen EU-India cooperation in the region. Romania is committed to active involvement in the Indo-Pacific within the framework of this strategy.

➢ The EU-India Strategic Partnership roadmap and commitments from the EU-India Leaders' Meeting in May 2021 provide a good basis to enhance cooperation and promote **regional security in the Indo-Pacific.**

➢ Strengthening relations with Indo-Pacific partners is crucial for addressing global challenges and **upholding the rule-based international order** at both bilateral and multilateral levels.

How have been the India-Romania Relations?

➢ **Diplomatic Relation:**

  ○ India-Romania bilateral ties, **formally established in 1948**, have witnessed a steady growth.

  ○ Both maintained friendly and cordial relations, culminating in the c**elebration of 70 years of diplomatic ties in 2018**.

  ○ Since the 1989 revolution in Romania, which overthrew the communist government, **both countries have steadily increased trade and investments** in each other.

  ○ At the multilateral level, India and Romania have extended support to each other at the UN.

➢ **Trade and Investments:**

  ○ Romania has in the past collaborated in projects involving petroleum, petrochemicals, power, and metallurgy industries in India. Romania was engaged in oil refinery projects in **Assam and Bihar.** Romania also shared their technology know-how for a thermal power plant in Singareni, the Mangalore pellet plant, the Durgapur steel plant, and a Hyderabad tractor plant.

  ○ An Agreement on **Trade and Economic Cooperation**, granting mutual **Most Favored Nation (MFN)** status to each other was signed in 1993.

  ○ Since 2013, the trade volume has been around USD 600-800 million; both sides expect this figure to touch the one billion mark soon.

➢ **Green Energy:**

  ○ Romania has engaged in reducing its carbon blueprint and is committed to achieve the **EU ambitious new targets to curb further the climate change.**

  ○ Romania together with India can **certainly cooperate and collaborate in this key sector.**

  ○ The two nations can work together to reduce **carbon footprint and focus on harnessing sustainable sources** of power, such as **solar energy.**

Note:

○ Romania is determined to become shortly a member of the **International Solar Alliance,** positive steps have already been taken.

➢ **Connectivity:**

○ Romanian infrastructure companies can work with Indian partners to expand connectivity across Europe and India.

○ Through the **International North-South Transport Corridor (INSTC)**, India remains committed to building a multimode network, connecting India to Iran, Azerbaijan, Iran, Afghanistan, Russia, Central Asia, and Europe.

○ This will enhance the movement of **freight North-South.**

○ The Romanian government has also undertaken expansion of the **trans-European transport network**.

○ These mega connectivity projects will **have many meeting points** and scope for collaboration.

India's Role in the Korean War

Why in News?

During its **G20 Presidency Year 2023**, India is recalling its diplomatic role in the **Korean War seven decades ago**.

India's role in the Korean War was partially successful, yet India is counted among the countries that **contributed to bringing the war to a close.**

Korea and 38th Parallel

What is the Timeline of the Korean War?

➢ **Background:**

○ The root of the conflict lies in the **Japanese occupation of Korea** between 1910- 1945.

○ When Japan was defeated in the **Second World War**, the Allied forces agreed to establish a "four-power trusteeship over Korea" at the Yalta Conference (1945).

○ However, the **USSR (Union of Soviet Socialist Republics)** invaded Korea and took control of the north while the south remained under the rest of the allies, mainly the USA.O

○ The division of the two regions was along the 38th parallel north, which still continues to be the official border dividing the two Koreas.

○ In 1948, the **Republic of Korea (South Korea)** and the Democratic People's Republic of Korea (North Korea) were established.

○ As both tried to enhance their reach, territorially and ideologically, the Korean Conflict emerged between the two nations.

➢ **Timeline of the War:**

○ **In 1950**, North Korea, backed by the USSR, launched an attack on South Korea and **occupied most of the country.**

○ In response, the United Nations force led by the US retaliated.

○ **In 1951**, the US forces led by Douglas MacArthur crossed the 38th parallel and triggered the **entry of China in support of North Korea.**

○ To prevent further escalation, peace t**alks began later in 1951.**

○ India was actively involved in negotiating peace in the Korean peninsula by engaging all the major stakeholders – **US, USSR and China.**

○ **In 1952, the Indian resolution on Korea was adopted** at the **United Nations (UN).** In 1953, the **Korean Armistice Agreement** was signed between the UN Command, the Korean People's Army and the Chinese People's Volunteer Army.

○ It led to an official **ceasefire without a Peace treaty.** Thus, the war officially never ended. This also led to the establishment of the **Korean Demilitarised Zone (DMZ)** – a strip of land running across the Korean Peninsula to serve as a buffer zone between North Korea and South Korea.

○ **In December 1991**, North and South Korea signed a pact agreeing to **refrain from aggression.**

What was India's Role in the Korean War?

➢ In 1950 Prime Minister Jawaharlal Nehru made a **huge diplomatic push to prevent an escalation into another world war**, and for the **parties to arrive at a quick ceasefire.** A couple of attempts by India to bring about a ceasefire ended in failure. However, its 1952 proposals for the exchange of prisoners **enabled the July 1953 armistice agreement**, which marks 70 years this year.

➢ India proposed a **commission to resolve the issue of prisoners of war (PoWs)** during talks between the UN and communist sides in 1952, but the proposal was initially shelved. However, when negotiations **resumed in 1953, India was selected to chair the Neutral Nations Repatriation Committee,** which successfully held PoWs for 90 days and eventually signed the Armistice Agreement on July 27, 1953.

➢ India has consistently voiced its opposition to North Korean nuclear and missile tests. However, it has maintained a neutral stance regarding sanctions.

➢ India also sent the **60th Parachute Field Ambulance, which did outstanding work treating more than 200,000 people between 1950 and 1954.**

How has been India's Relations with North and South Korea?

➢ In May 2015, the bilateral relationship with South Korea was **upgraded to 'special strategic partnership'.**

○ India has a major role to play in South Korea's Southern Policy under which the latter is looking at expanding relations beyond its immediate region.

○ Similarly, South Korea is a major player in **India's Act East Policy** under which India aims to promote economic cooperation, cultural ties and develop strategic relationships with countries in the Asia-Pacific.

➢ India has had diplomatic relations with North Korea for over 47 years, which reflects the legacy of India's commitment to the **Non-Alignment Movement.**

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Social Issues

Highlights

- *Kurmis' Push for ST Status*
- *Himachal Pradesh Sukhashraya Act, 2023*
- *Limiting Salt Intake*

Kurmis' Push for ST Status

Why in News?

Recently, the Kurmi Community has called off the agitation in Bengal, asking for the inclusion in the **ST (Scheduled Tribe)** Status from **Other Backward Class (OBC).**

➢ They also want their Kurmali language to be included in the **Eighth Schedule of the Constitution.**

What is the Background?

➢ Kurmis were not included among the communities classified as STs in the 1931 Census and were **excluded from the ST list in 1950.**

➢ In 2004, the Jharkhand government recommended the community be added to the ST list **rather than be categorized as OBCs.**

> **What is the Process of Inclusion under ST?**
> ➢ The process for including a community in the list of ST follows a set of **modalities established in 1999.**
> ➢ The respective State or Union Territory government must **initiate the proposal for inclusion, which then goes to the Union Tribal Affairs Ministry** and subsequently to the Office of the Registrar General of India (ORGI).
> ➢ If the ORGI approves the inclusion, the proposal is then sent to the **National Commission for Scheduled Tribes**, and if they concur, the proposal is forwarded to the Cabinet for amendment to the **Constitution (Scheduled Tribes) Order, 1950.**

➢ Following the recommendation, the matter went to the **Tribal Research Institute (TRI)**, which held that Kurmis are a sub-caste of **Kunbis and not tribals.** Based on this, the **Centre rejected the demand of Kurmis** to be considered as ST.

➢ According to the Tribal Development Department of the state government, the state's tribal population is almost 53 lakhs as per Census 2011, or about 5.8% of the state's total population.

Who are the Kurmis?

➢ **About:**
  ○ Kurmis are a landowning farming community whose **status varies from place to place.**
  ○ Kurmis are referred to as "**progressive farmers" who "avail of maximum benefits of all the development schemes** available in the area and region.
  ○ Kurmis are distributed across several states — Uttar Pradesh, Bihar, Odisha, Maharashtra, Gujarat, Chhattisgarh, Madhya Pradesh, West Bengal, Jharkhand, Goa, and Karnataka.

➢ **Caste Status:**
  ○ In most states, Kurmis belong to the OBC in both the central and state lists for reservations.
  ○ In Gujarat, Patels, who are linked to Kurmis, are in the general category, and have been demanding OBC status.
  ○ In West Bengal, Odisha, and Jharkhand — where **Kurmi is written as 'Kudmi' — Kurmis** want to be included among Scheduled Tribes.

➢ **Kurmali Language:**
  ○ Kurmali language is a language spoken by the Kurmi community, primarily in the Indian states of **Bihar, Jharkhand, and Odisha.**
  ○ The Kurmali language is a **member of the Indo-Aryan language family** and **belongs to the Bihari language family.** It shares some similarities with Maithili and Magahi. It has its own script called "Kurmi Kudali" which is a modified version of the Devanagari script.

Himachal Pradesh Sukhashraya Act, 2023

Why in News?

Himachal Pradesh passed Sukhashraya (Care, Protection, and Self-Reliance of Children of the State) Act, 2023 **to ensure the welfare of orphans and persons** with special needs.

What are the Key Details of Sukhashraya Act, 2023?

➢ **About:**
  ○ The Act defines **orphans as those without biological parents or whose parents are incapacitated** and includes children in need of care and protection such as those without homes or those at risk of forced marriage, crime, or drug abuse.
  ○ The Act offers **financial and institutional benefits to the beneficiaries between the age of 18-27 years**, along with vocational training, skill development, and coaching to help them become active members of society.
  ○ The Act is a step towards ensuring the protection and care of the most vulnerable section of society.

➢ **Benefits under the Act:**
  ○ A **Mukhya Mantri Sukhashraya Sahayata Kosh fund** of Rs 101 crore has been formed, and **a child welfare committee will be established in each district** to oversee the scheme.
  ○ Orphans and persons with special needs will **become 'children of the state'.**
  ○ **Financial benefits** include **Rs 5,000 in summer** and **winter, Rs 500 for** major **festivals,** and **Rs 4,000 monthly allowance** for **daily expenses** in college.
  ○ **Institutional benefits** include sponsored **train tickets** and **accommodation for 10 days** within the state, and **hostel fees** for beneficiaries in **ITI and government colleges.**
  ○ The government will give **a fixed amount of money at the time of marriage** and **three biswas of land to build their own homes.**
  ○ **Orphans** who wish to establish their own **start-ups will be given a token corpus** to incentivize entrepreneurial pursuits.

  ● Ph.D. students will also receive the monthly allowance.

➢ **Other Safeguards Mentioned in the Act:**
  ○ Ex-residents of childcare institutions will be supported by the state government till the age of 21 years.
  ○ **Recurring deposit accounts will be opened for each child and orphan**, and the state government shall make contributions to these accounts as per prevalent rates.
  ○ The **child welfare committee will carry out surveys to identify orphans** and will look into the demands of children in need.

Note:

➢ As per the **Juvenile Justice (Care and Protection of Children) Act, 2015**, orphan and destitute children in the country are "Children in need of care and protection (CNCP).

➢ The primary responsibility of execution of the Act lies with the States/UTs.

What is the Similar Initiative of Union Government?

➢ **Child Protection Services (CPS) Scheme or "Mission Vatsalya":**
  ○ Launched by Ministry of Women and Child Development.
  ○ Under the provisions of the CPS, Central Government is **providing financial assistance to the States/UTs for undertaking a situational analysis of children** in difficult circumstances, inter-alia.
  ○ Under the scheme institutional care to Children in need of care and protection and Children in Conflict with Law is provided in Child Care Institutions (CCIs).
  ○ The scheme also **provides for non-institutional care** wherein support is extended for adoption, foster care and sponsorship.

Limiting Salt Intake

Why in News?

The **World Health Organization (WHO)** recommends a daily intake of less than 5 grams of salt for adults, but an average Indian's sodium consumption is more than double that amount.

Note:

➢ The WHO has set a goal for member states to reduce population sodium intake by 30% by 2025, but progress has been slow. India's sodium score **of 2 out of 4 indicates the need for more rigorous efforts** to address this health concern.

➢ The WHO recently published the **'Global Report on Sodium Intake Reduction,'** which sheds light on the progress of its 194 member states towards reducing population sodium intake by 30% by 2025.

What is the Need for Limiting Salt Intake?

➢ Excessive salt intake can have dangerous consequences such as **Hypertension**, heart disease, and stroke.

➢ Reducing sodium intake is important because it is strongly correlated with lower blood pressure, which can lead to a **decrease in Cardiovascular Diseases**.

○ Cardiovascular disease is the leading cause of **mortality worldwide and is responsible for a significant economic impact** on low- and middle-income countries (LMICs) such as India.

● Cardiovascular disease and hypertension are significant challenges in India due to several factors, including rising mortality rates, **higher prevalence in men, particularly in southern states**, and a large pre-hypertensive population.

➢ The **2020 Report on Medical Certification of the Cause of Death** shows that circulatory system diseases account for 32.1% of all documented deaths in India, with hypertension being a major risk factor.

➢ The World Economic Forum projects that the Indian economy alone faces losses surpassing USD 2 trillion between 2012 and 2030 because of cardiovascular disease.

What are the Related Initiatives?

➢ **Eat Right India Campaign:**

○ It was launched by the **Food Safety and Standards Authority of India (FSSAI), aiming** to transform the Indian food system and ensure that everyone has access to safe, nutritious, and sustainable food.

➢ **Aaj Se Thoda Kam Campaign:**

○ FSSAI has initiated the 'Aaj Se Thoda Kam' social media campaign. Despite these efforts, the average sodium consumption of Indians remains alarmingly high. Studies have found that the typical daily intake of sodium in India is around 11 grams, which is much higher than the recommended intake of 5 grams per day.

Why is Salt Consumption Important?

➢ Salt as a Sodium chloride is an **essential nutrient that plays several important roles** in the body.

➢ Sodium is an electrolyte that **helps to regulate the balance of fluids in the body and aids in the transmission of nerve impulses** and muscle contractions.

➢ Salt consumption is important for maintaining proper bodily function, **but excessive intake can have negative health consequences**, making it important to consume salt in moderation.

How can the Related Challenges be Addressed?

➢ India needs a **comprehensive national strategy to reduce salt consumption**, with a multi-pronged approach that engages consumers, industry, and the government. Collaboration between state and union governments is essential to **combat hypertension caused by excessive sodium intake.**

➢ Reducing sodium consumption has been identified as a **highly cost-effective strategy to prevent Non Communicable Diseases (NCDs)**, which are responsible for the majority of deaths worldwide.

○ A report suggests that implementing policies to reduce sodium consumption could save an e**stimated seven million lives globally by 2030.**

➢ The sodium reduction policy is crucial to achieving the **Sustainable Development Goal (SDG)** of reducing deaths from NCDs.

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Science & Technology

Highlights

- Sky Canvas: Artificial Meteor Showers
- Brightest Gamma Ray Burst Detected
- Reusable Launch Vehicle-Technology
- Laser Carbon to Produce Hydrogen
- NASA's TEMPO Mission
- Discovery of a New Uranium Isotope
- James Webb Space Telescope Captures Uranus and its Rings
- European Space Agency's Juice Mission
- Indian DefSpace Symposium

- Quantum Technology for Securing Maritime Communications
- Large Hadron Collider
- India Approves Construction of LIGO
- Genome India Project
- Countries Regulating on AI and Chatbots
- Indian Space Policy 2023
- 3D Printed Cryogenic Engine and Space Sector Privatisation
- Dark Matter
- Ultramassive Black Hole

Sky Canvas: Artificial Meteor Showers

Why in News?

Recently, a Japanese company, ALE, plans to **launch satellites that will trigger an artificial meteor shower**, called **Sky Canvas in 2025.**

What is the Sky Canvas Project?

➢ The **Sky Canvas** project aims to give people all over the world **"the opportunity to view the world's first live human-made meteor shower."**

➢ ALE plans to use a **pressure-driven system of gas tanks** that will **shoot pellets at a speed of 8 kilometers per second** to trigger the artificial meteor shower.
  - ○ The metal "shooting star" particles will be **taken to a low-Earth orbit by small satellites**.
  - ○ Once the orbit stabilises, the particles will be released, and they will travel around part of the planet before entering the atmosphere at an altitude of **60 to 80 kilometres.**
    - The company also hopes to collect **atmospheric data in the mesosphere (the third layer of the atmosphere) to further scientific understanding of climate change.**
    - The Mesosphere is **too low to be observed by satellites** and **too high for weather balloons or aircraft.**

How Does a Natural Meteor Shower Occurs?

➢ A natural meteor shower **occurs when the Earth passes through a stream of debris left behind by a comet or asteroid**.
  - ○ As the Earth travels in its orbit around the Sun, it encounters these streams of debris, which are **composed of tiny particles of dust and rock.**

➢ As the Earth passes through this debris, the **particles enter the Earth's atmosphere** at high speeds, typically around **40 kilometres per second.**
  - ○ The **friction between the particles and the atmosphere causes them to heat up and vaporise,** creating the streaks of light that we see as **meteors** or **"shooting stars."**

➢ The name of the meteor shower is typically d**erived from the constellation from which the meteors appear to radiate.**
  - ○ For example, the **Perseid meteor shower** appears to originate from the constellation **Perseus.**
  - ○ Around **30 meteor showers that are visible to observers on Earth occur every year** and some of them have been observed for centuries.

Brightest Gamma Ray Burst Detected

Why in News?

In October 2022, **astronomers recorded the brightest gamma-ray radiation (named GRB 221009A)**

Note:

of all time, which could overturn a long-standing theory of GRB jets.

➢ The observation was conducted jointly by Center for Astrophysics, Harvard and Smithsonian's Submillimeter Array (SMA) in Hawaii, the MeerKAT Array in South Africa, the US National Science Foundation's Karl G Jansky Very Large Array (VLA) in New Mexico (USA), the **Atacama Large Millimeter Array (ALMA)** in Chile and **NCRA's Giant Metrewave Radio Telescope, India.**

What is a Gamma-Ray Burst?

➢ **About:**
- ○ **Gamma-Ray Bursts** are the most powerful class of explosions in the universe, and they occur when massive stars die.
- ○ When a **massive star collapses, it creates a black hole**, and the energy released during this process produces jets of high-energy particles that travel almost at the speed of light.
- ○ These **jets pierce through the collapsing star, producing X-rays** and gamma rays, which can be detected by observatories on Earth and in space.

➢ **Types of GRBs:**
- ○ **Long-duration gamma-ray bursts (LGRBs):**
  - LGRBs **last for more than two seconds** and are **thought to be caused by the collapse of massive stars, known as supernovae**.
  - These explosions release a tremendous amount of energy and create a black hole at their center. LGRBs are the most common type of GRB and can be observed from distant galaxies.
- ○ **Short-duration gamma-ray bursts (SGRBs):**
  - SGRBs **last for less than two seconds** and are **thought to be caused by the collision of two compact objects, such as neutron stars or a neutron star and a black hole**.
  - SGRBs are much rarer than LGRBs, are more difficult to observe and typically located closer to our galaxy.

What is GRB 221009A?

➢ **About:**
- ○ GRB 221009A was detected in October 2022, by **NASA's Fermi Gamma-ray Space Telescope, Neil Gehrels Swift Observatory, and Wind spacecraft.**

- ○ The signal originated from the direction of the **constellation Sagitta**, and it took approximately **1.9 billion years to reach Earth.**
- ○ The 5-minute-long radiation pulse was the **brightest GRB ever and nearly 70 times brighter than any other such eruption** ever observed.

➢ **Observation from GRB 221009A:**
- ○ The pulse of radiation was unusually **bright and long-lasting, which made it stand out from other gamma-ray bursts.**
- ○ The signal triggered detectors at multiple observatories, indicating its strength and duration.

➢ **Researchers about 221009A:**
- ○ "Long-duration" GRBs occur when the core of a massive star collapses under its own weight, giving birth to a black hole.
- ○ This formation produces powerful plasma jets that shoot gamma rays at almost the speed of light. When these jets collide with the gas surrounding the dying star, a bright afterglow is produced across the spectrum.

➢ **Significance:**
- ○ Astronomers from the **National Centre for Radio Astrophysics** in India concluded that the **signal was a birth cry of a black hole.**
- ○ GRB 221009A provides astronomers with valuable insights into the **formation of black holes and the mechanisms that produce gamma-ray bursts**.
- ○ The detection of GRB 221009A will help astronomers refine their understanding of the conditions required for the formation of black holes and the production of gamma-ray bursts.

Reusable Launch Vehicle-Technology

Why in News?

Recently, **Indian Space Research Organisation(ISRO)** and its partners successfully demonstrated a precise landing experiment for a **Reusable Launch Vehicle (RLV)** at the **Aeronautical Test Range (ATR),** Chitradurga, Karnataka.

➢ An **Indian Air Forces (IAF) Chinook helicopter** was used to drop the RLV-TD from a 4.5 km altitude and ISRO executed the landing experiment of the RLV-TD as planned.

Note:

What is ISRO's RLV Project?

➢ **About:**
  ○ According to ISRO, the series of experiments with the winged **Reusable Launch Vehicle-Technology Demonstration (RLV-TD**) are part of efforts at **"developing essential technologies for a fully reusable launch vehicle to enable low-cost access to space"**.
  ○ In the future, this vehicle will be scaled up to become the first stage of **India's reusable two-stage orbital (TSTO) launch vehicle.**

➢ **Features and Application:**
  ○ ISRO's RLV-TD looks like an aircraft. It consists of a **fuselage, a nose cap, double delta wings, and twin vertical tails**.
  ○ The RLV-TD will be used to develop technologies like **hypersonic flight (HEX), autonomous landing (LEX), return flight experiment (REX)**, powered cruise flight, and **Scramjet Propulsion Experiment (SPEX).**

➢ **Significance:**
  ○ With the costs acting as a major deterrent to space exploration, **a reusable launch vehicle is considered a low-cost, reliable, and on-demand mode** of accessing space.
  ○ By using **RLVs the cost of a launch can be reduced by nearly 80%** of the present cost.

➢ **Other Previous Experiment:**
  ○ ISRO had earlier demonstrated the re-entry of its winged vehicle **RLV-TD in the HEX mission in May 2016**.

MISSION PROFILE
RLV -TD
HEX -01
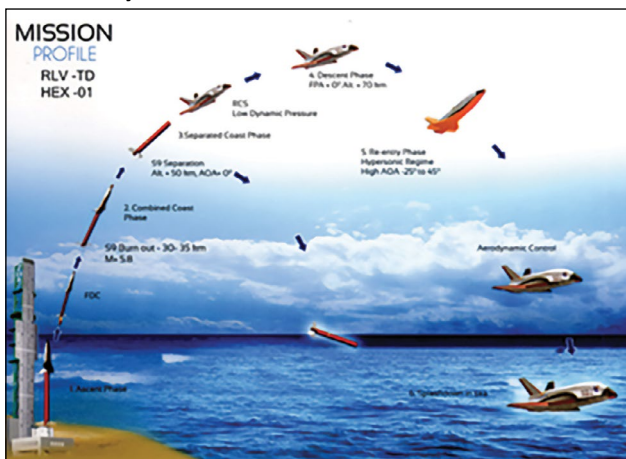
  ○ In **HEX**, the vehicle landed on a **hypothetical runway over the Bay of Bengal**. Precise landing

on a runway was an aspect not included in the HEX mission.
  ○ The **LEX mission** achieved the final approach phase that coincided with the re-entry return flight path exhibiting an autonomous, **high speed (350 kmph) landing.**

➢ **Other Agencies Using RLV or Partial RLV:**
  ○ Reusable space vehicles have been in existence for a long time with **NASA** space shuttles **carrying out dozens of human space flight missions.**
  ○ **SpaceX** has been demonstrating partially reusable launch systems with its **Falcon 9** and Falcon Heavy rockets since 2017.
  ○ SpaceX is also working on a fully **reusable launch vehicle system called Starship.**

Conclusion

The successful landing experiment of the RLV-TD programme marks a significant milestone in India's space technology development. The RLV-TD is an important step towards achieving low-cost access to space, and its successful implementation will benefit **India's space program in the future.**

Laser Carbon to Produce Hydrogen

Why in News?

Recently, a few Researchers have developed a **novel Carbon-Based Catalyst** called **Laser Carbon** to make water electrolysis more efficient.

What is Laser Carbon and its Significance?

➢ **Laser Carbon can replace expensive metal-based catalysts** in the electrolysis of water to produce hydrogen.
  ○ The electrolysis of water consumes a lot of energy. The **traditional solution is to use a catalyst to induce the water molecules** to split at a lower energy.

➢ Laser carbon is a porous carbon material containing **nitrogen that acts as both a catalyst and an anode** in electrolysis.

➢ It reduces the energy required for splitting water by lowering the overpotential of the **Oxygen Evolution Reaction (OER).**

Note:

- ➢ Laser carbon is simpler to synthesise, and **can be batch-manufactured with a laser in an environmentally friendly process,** unlike other carbon-based catalysts.
  - ❍ **Common catalysts are based on iridium and ruthenium,** which are expensive and in great demand in other sectors.
- ➢ Although its catalytic activity is not as good as metal-based catalysts, it can be **improved by using different polymers i**n the fabrication process.

What is Electrolysis?

- ➢ Electrolysis is a process of using an **electric current to bring about a chemical reaction.**
- ➢ In electrolysis, **an electric current is passed through an electrolyte (a substance that conducts electricity when dissolved in water or melted)** to produce a chemical change.
- ➢ The electric current causes the positive and negative ions in the electrolyte to move towards the opposite electrodes, causing the separation of the **electrolyte into its constituent elements or the formation of a new compound.**
- ➢ Electrolysis is used in a variety of industrial processes, including the production of metals, cleaning metal surfaces, and the production of hydrogen gas from water.

Electrolysis of Water

At anode:
$$2 H_2O\ (l) \longrightarrow O_2(g) + 4 H^\oplus + 4 e^\ominus$$

At cathode:
$$2 H^\oplus(aq.) + 2 e^\ominus \longrightarrow H_2(g)$$
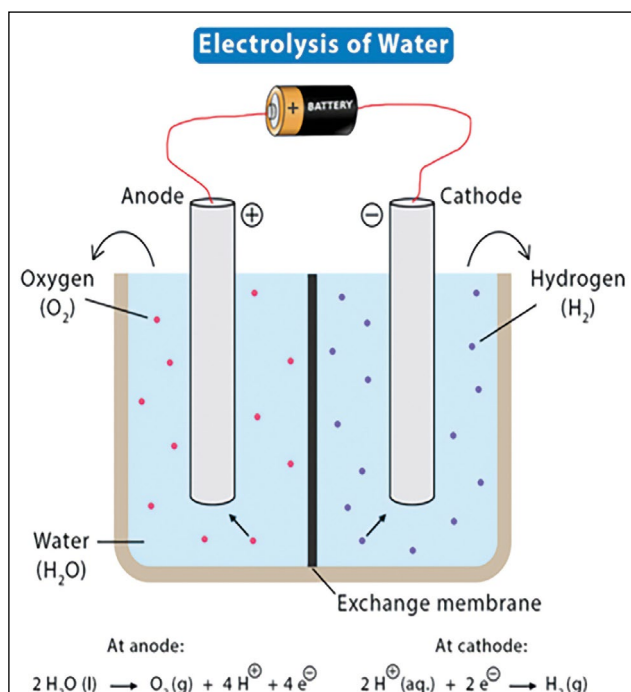
NASA's TEMPO Mission

Why in the News?

Recently, a **SpaceX Falcon 9** rocket launched the **Tropospheric Emissions Monitoring of Pollution (TEMPO) instrument** from Florida.

What is TEMPO?

- ➢ **About:**
  - ❍ **TEMPO is a NASA device** that can **track air pollution over North America** from space. It will allow scientists to **monitor air pollutants and their emission sources** down to the neighbourhood level.
  - ❍ The TEMPO instrument is a grating spectrometer**, sensitive to visible and ultraviolet wavelengths of light.**
- ➢ **Features:**
  - ❍ TEMPO is hosted on an **Intelsat communications satellite** in geostationary orbit.
  - ❍ It will be able t**o measure atmospheric pollution** down to a spatial resolution of **4 square miles or neighbourhood level.**
- ➢ **Applications and Importance:**
  - ❍ TEMPO will have multiple applications from **measuring levels of various pollutants to providing air quality forecasts** and helping the development of emission-control strategies
  - ❍ More than **40% of the US population live in places with unhealthy levels of particle pollution or ozone**, and air pollution is blamed for some 60,000 premature deaths a year.

> **What is a Geostationary Orbit?**
> - ➢ **Geostationary orbit** is an orbit around the Earth where a **satellite's orbital period matches the Earth's rotation**, allowing the satellite to stay in a fixed position over the same point on the Earth's surface.
> - ➢ The height of a geostationary orbit is approximately 35,786 kilometers (22,236 miles) above the Earth's equator.
> - ➢ Satellites in geostationary orbit are typically used for **communication and weather observation purposes**, as they can provide constant coverage of a specific region without the need for frequent repositioning.

Note:

Discovery of a New Uranium Isotope

Why in News?

In pursuit of a **'magic number'**, Physicists in Japan have recently discovered a **new isotope of uranium** with **atomic number 92 and mass number 241**.

What are the Major Highlights of Discovery?

➢ **About:**
  ○ The researchers accelerated **uranium-238 nuclei into plutonium-198 nuclei at the KEK Isotope Separation System (KISS)**. In a process called multinucleon transfer, the two isotopes exchanged protons and neutrons.
  ○ The resulting nuclear fragments contained different isotopes.
  ○ The team used **time-of-flight mass spectrometry** to measure the mass of each nucleus.

➢ **Findings:**
  ○ It was identified as **uranium-241 and measured the mass of its nucleus.** Theoretical calculations suggest that this **new isotope could have a half-life of 40 minutes.**
    ● This discovery is the **first of its kind since 1979** due to the extreme difficulty of synthesising a nuclide in this region by general reaction.

➢ **Importance**:
  ○ This finding is significant **in refining our understanding of nuclear physics** and has implications in **designing nuclear power plants and models of exploding stars.**
    ● Measuring the mass of uranium and its neighbourhood elements yields **essential nuclear information to understand the synthesis of such heavy elements** in explosive astronomical events.

➢ **Future Implications:**
  ○ This new approach using multinucleon transfer reaction and KISS is expected to **lead to the discovery of more neutron-rich actinide nuclides,** elucidating the stability of nuclides and the process of astronomical nucleosynthesis.

Note: Uranium (chemical symbol U) is a naturally occurring radioactive element. In its natural state, Uranium consists of three isotopes **(U-234 (0.0057%), U-235 (0.72%) and U-238 (99.28%)).** Other isotopes that cannot be found in natural uranium are **U-232, U-233, U-236 and U-237.**

What are Magic Numbers'?

➢ In **nuclear physics**, "magic numbers" are **specific numbers of nucleons (protons or neutrons)** that correspond to **particularly stable configurations within atomic nuclei.**

➢ These numbers are believed to arise from the underlying shell structure of atomic nuclei.
  ○ The heaviest known **'magic' nucleus is lead (82 protons).**

James Webb Space Telescope Captures Uranus and its Rings

Why in News?

The **James Webb Space Telescope**, launched in 2021, has captured a **clear image of the planet Uranus and its rings**.

What are the Major Points Related to Uranus?

➢ Uranus is an **ice giant due to the chemical makeup of its interior,** with most of its mass being a hot and dense fluid of icy materials like **water, methane, and ammonia.**

➢ **Uranus rotates on its side**, with a roughly **90-degree angle from the plane of its orbit**. This leads to extreme seasons and long periods of sunlight and darkness.
  ○ **Uranus is among** only two planets in our solar system that rotate clockwise along with **Venus.**
  ○ The planet takes **84 earth years to orbit the Sun**.

➢ Uranus has **13 rings, with 11 visible in the image**. Some of the rings are very bright and close together, appearing as a larger ring.
  ○ The planet also has **27 known moons.**

➢ Uranus has a **unique polar cap that appears during summer and vanishes** in the fall. Webb's data can help scientists understand this mechanism.

Note:

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➢ **In 1986, NASA's Voyager 2** made the first - and so far, the **only - visit to Uranus**.

➢ New Horizons passes the orbit of Uranus on its way to Pluto, becoming the first spacecraft to journey beyond Uranus' orbit since Voyager 2.

JAMES WEBB SPACE TELESCOPE
URANUS | FEBRUARY 6, 2023

What is a James Webb Space Telescope?

➢ The **James Webb Space Telescope (JWST)** is a **large, infrared telescope** designed to observe the most distant objects in the universe.

○ The JWST is the **successor to the Hubble Space Telescope.**

➢ It is a collaboration between **NASA, the European Space Agency (ESA), and the Canadian Space Agency (CSA).**

➢ The telescope was launched in **December 2021** and is **currently at a point in space known as the Sun-Earth L2 Lagrange point, approximately 1.5 million km beyond Earth's orbit around the Sun.**

○ **Lagrange Point 2** is one of the **five points in the orbital plane of the Earth-Sun system.**

○ **Lagrange Points** are positions in space where the **gravitational forces of a two-body system (like the Sun and the Earth)** produce enhanced regions of attraction and repulsion.

➢ Its primary mission is to study the **early universe, the formation of galaxies, stars, and planets, and the atmospheres of exoplanets.**

European Space Agency's Juice Mission

Why in News?

Recently, the European Space Agency is set to launch the Jupiter Icy Moons Explorer (Juice) mission **to explore Jupiter and its icy moons, namely Ganymede, Callisto, and Europa.**

What is Juice Mission?

➢ **About:**

○ **Launched from French Guiana** on an Ariane 5 launcher. The mission is set to reach Jupiter in 2031.

○ The spacecraft was constructed by Airbus Defence and Space, a division of the Airbus group.

➢ **Objectives:**

○ **The main objective of the mission:**

● To create **detailed maps of the moons' surfaces** and look beneath them to probe the potential habitable environments by analyzing the water bodies underneath.

● To create a **comprehensive picture of Jupiter** by trying to understand its origin, history, and evolution.

○ The focus will be on **Ganymede (the largest moon in the Solar System**, which generates its magnetic field).

● The three moons, Ganymede, Callisto, and Europa, are believed to hold immense amounts of water, potentially making them habitable.

○ Juice isn't equipped to detect life but can find out whether there could be places around Jupiter, inside the icy moons, where the necessary conditions, such as water, biological essential elements, energy, and stability, to sustain life are present.

What is Jupiter?

➢ Fifth in line from the Sun, Jupiter is, by far, the **largest planet in the solar system** – more than twice as massive as all the other planets combined.

○ Jupiter, Saturn, Uranus and Neptune are called **Jovian or Gas Giant Planets.** These have thick atmosphere, **mostly of helium and hydrogen.**

➢ Jupiter's iconic **Great Red Spot** is a giant storm bigger than Earth that has raged for hundreds of years.

Note:

➢ Jupiter **rotates once about every 10 hours** (a Jovian day), but takes about **12 Earth years** to complete **one orbit of the Sun** (a Jovian year).

➢ Jupiter has **more than 75 moons.**
  ○ The planet Jupiter's **four largest moons are called the Galilean satellites** after Italian astronomer Galileo Galilei, who first observed them in 1610.
  ○ These large moons, named **Io, Europa, Ganymede, and Callisto**, are each distinctive world.

➢ In 1979, the **Voyager mission** discovered Jupiter's faint **ring system.**

➢ **Nine spacecraft** have visited Jupiter. Seven flew by and two have orbited the gas giant.
  ○ The **Galileo probe (NASA)** which orbited the planet between 1995 and 2003.
  ○ **Juno (NASA)** has been circling the planet since 2016.

Indian DefSpace Symposium

Why in News?

Recently, the **Indian Space Association (ISpA) in association with the Defence Research and Development Organization (DRDO)** organized the **Indian DefSpace Symposium which** focuses on the growing government and military focus on the space domain and explores ways to enhance India's space capabilities.

➢ The event was held as part of the deliberations under **'Mission Def-Space,'** an ambitious effort launched by Prime Minister of India **to develop innovative solutions in the space domain through the Indian industry and start-ups**.

What is the Need for Transformation of Warfare?

➢ The nature of warfare is on the fold of major transformation, and **space is being used to enhance combat capabilities in land, sea, and cyber domains.**

➢ The symposium discusses the need for developing **dual-use platforms with cutting-edge technology** and increasing **offensive and defensive capabilities in the space domain**. and to explore the field of **miniaturization of satellites and reusable launch platforms** to mitigate costs and challenges.

➢ DRDO emphasized **the need to enhance space situational awareness capability**, safeguard space assets with counter space capabilities, and build resilience and redundancy in a space-based infrastructure.

➢ It also explores ways to expand the **Navic constellation, provide agile space-based intelligence, surveillance, and reconnaissance (ISR),** and ensure secure satellite-assisted communications.

➢ The symposium also discussed the need to factor in the presence of **trans-domain weapons,** targeting from air or from inner to outer space, and **integrate future space-based surveillance networks.**

What is India's Stand on Militarisation of Space?

➢ **Changing Polarity in Current Scenarios:** In India, historically, space has remained the sole jurisdiction of its civilian space agency, the **Indian Space Research Organisation (ISRO)**. India has always maintained a **pacifist** approach towards **space security, opposing the weaponization and militarisation of space.**
  ○ For the last decade, India's **approach to outer space has been shifting** and is now increasingly driven by national security concerns. Rather than opting for a morally driven policy, **India is focusing on peaceful uses of outer space.**
    ● Though India **has still not abandoned its policy of non-weaponization**, it has felt that its inaction and ignoring of contemporary developments in outer space could leave it vulnerable to a range of **threats to its space assets.**

➢ **Recent Developments: In 2019**, India conducted its first ever simulated space warfare exercise (**IndSpaceX**) with an eye on Chinese threats and successfully **tested** an **anti-satellite weapon (Mission Shakti)** in the same year.
  ○ Also, the launch of the tri-service Defence Space Agency (DSA) has permanently taken the military away from the shadows of civil space.
    ● India has also set up the **Defence Space Research Agency (DSRA)** to help develop **space-based weapons for the DSA**. Space is as much recognised as a military domain as **land, water, air and cyber.**
  ○ In **2020**, the Government of India approved the creation of **IN-SPACe**- an independent nodal agency under the **Department of Space** to encourage **private participation** in the space domain.

What is Mission Def-Space?

➢ It is an ambitious effort to **develop innovative solutions for the three Services (Indian airforce, Navy,** and **Army)** in the space domain through the Indian industry and start-ups.

➢ 75 challenges are being opened to get **innovative solutions,** based on the defence requirements in the space domain.

➢ Startups, innovators and the private sector will be invited to **find solutions for the problems that will include both offensive and defensive capabilities.**

➢ It aims to develop a range of military applications for space warfare and to enable the private industries to **offer solutions to the armed forces for future offensive and defensive requirements.**

➢ Defense applications in space will not only help the Indian armed forces **but can also be extended to friendly foreign nations.**

Quantum Technology for Securing Maritime Communications

Why in News?

RRI (Raman Research Institute) has inked a **Memorandum of Understanding (MoU)** with the **Indian Navy** on **Quantum Technologies** to develop secure maritime communications.

➢ RRI is an autonomous institute of the Department of Science and Technology (DST).

Note:

➢ **Quantum Technology** is a field of science and engineering that deals with the study and **application of quantum mechanics principles.**

   ❍ Quantum mechanics is the branch of physics that describes the behavior of matter and energy at the atomic and subatomic level.

➢ **There are Four domains of Quantum Technology:**

   ❍ **Quantum communication**
   ❍ Quantum simulation
   ❍ **Quantum computation**
   ❍ Quantum sensing and metrology

➢ Under this agreement, RRI's Quantum Information and Computing (QuIC) lab will lead the research efforts towards **developing Quantum Key Distribution (QKD) techniques** that the Indian Navy could leverage in the nation's efforts towards securing free space communications.

What is Quantum Communication?

➢ **Quantum Communication:**

   ❍ Quantum communication is **a subfield of quantum technology** that focuses on the development of secure communication systems that use the principles of quantum mechanics.

   ❍ Quantum communication uses a **fundamentally different approach to encryption**.

      ● The most common example of quantum communication is **QKD**, which allows two parties to generate an **encryption key that is virtually uncrackable.**

➢ **Mechanism of Quantum Communication:**

   ❍ **Encoding Information:** Information is encoded onto quantum bits (qubits), which can exist in **multiple states simultaneously.**

      ● This property is known as **superposition**.

   ❍ **Transmitting Information:** The encoded **qubits are transmitted over a quantum communication channel,** such as a **fiber optic cable** or a free-space link.

      ● The qubits are **typically transmitted one at a time.**

   ❍ **Receiving Information:** The receiving party measures the qubits using a quantum measurement device.

      ● The measurement **process collapses the superposition state of the qubit to a single state**, revealing the encoded information.

   ❍ **Detecting Eavesdropping:** One of the key features of quantum communication is that any **attempt to eavesdrop on the communication will disturb the quantum state of the qubit,** making it immediately detectable.

      ● This is known as the **"no-cloning theorem" and is a fundamental principle** of quantum mechanics.

   ❍ **Establishing a Secret Key:** By exchanging a sequence of qubits, the transmitting **and receiving parties can establish a secret key that can be used for secure communication.**

- This key can be used with conventional encryption algorithms to **ensure the confidentiality and integrity** of transmitted information.

How Can Quantum Technology be useful In Maritime Communication?

➢ **Secure Communication:**
  ○ Quantum **encryption can be used to ensure secure communication between ships** and shore stations, making it difficult for hackers to intercept or eavesdrop on the communication.

➢ **High-speed Communication:**
  ○ Quantum technology can enable **faster communication between ships and shore stations** by using quantum entanglement to transmit information instantaneously over long distances.
    - This could be **particularly useful for communication in remote areas** where traditional communication methods are limited.

➢ **Precision Navigation:**
  ○ Quantum sensors can be used to improve navigation accuracy by measuring the **Earth's magnetic field with high precision.**
    - This could help ships **navigate through narrow channels**, avoid obstacles, and improve overall safety.

➢ **Improved Weather Forecasting:**
  ○ Quantum computers can be used to **run complex simulations of weather patterns,** which can provide accurate and timely information to mariners about impending storms or other dangerous weather conditions.

Large Hadron Collider

Why in News?

The **LHC (Large Hadron Collider)** has recently undergone upgrades to make it more accurate and sensitive and will start collecting data in May 2023.

What is Hadron?
➢ Hadron is any member of a class of subatomic particles that are built from quarks and thus react through the agency of the strong force. The hadrons embrace mesons, baryons (e.g., protons, neutrons, and sigma particles), and their many resonances.

➢ The LHC has undergone upgrades to increase its sensitivity and accuracy, allowing scientists to **study particles with even higher energy.**

What is LHC?

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

➢ **Working Mechanism:**
  ○ Protons, which are subatomic particles made up of **quarks and gluons, are accelerated inside the LHC** using these magnets.
    - Quarks and gluons are subatomic particles that **make up protons and neutrons**. Quarks come in six different "flavors": up, down, charm, strange, top, and bottom. Gluons are particles that "glue" **quarks together inside protons and neutrons** through the strong **nuclear force.**
    - **Protons are not the only particles accelerated in the LHC.**
  ○ By switching the direction of the magnetic field rapidly, **protons can be accelerated through the beam pipe.**
  ○ Other components help to focus the particles and keep them from hitting the pipe's walls.
  ○ The protons eventually move **at 99.999999% of the speed of light.**
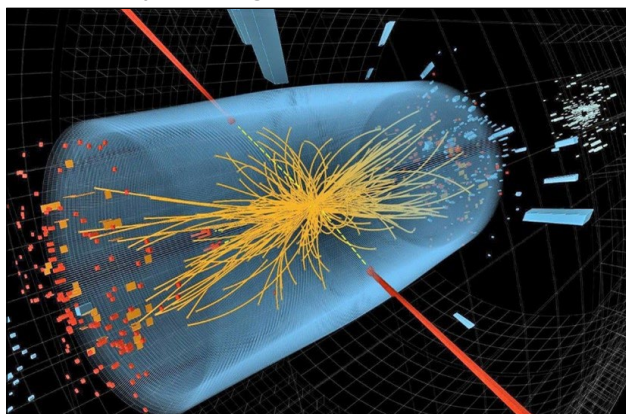
➢ **Significance:**
  ❍ At such high energies, the **LHC can create conditions that existed only fractions of a second** after the **Big Bang.**
  ❍ Scientists use detectors placed along the beam pipe to observe the **interactions of the accelerated particles**, which can reveal new insights into the nature of matter and the universe.
  ❍ The LHC has already **discovered the Higgs boson in 2012 and confirmed their findings in 2013**, which is a particle that gives other particles mass.
  ❍ The LHC also helps to **test theories in particle physics,** such as supersymmetry and extra dimensions.

What are Supersymmetry and Extra Dimensions?
➢ **Supersymmetry:**
  ❍ It proposes that **every known particle in the universe has a yet-to-be-discovered "super-partner" particle**, which would have opposite spin and different quantum numbers.
  ❍ This would mean that every particle in the universe would have a **partner that has not yet been observed,** and it could help to solve some of the problems with the current standard model of particle physics, such as the hierarchy problem.
➢ **Extra Dimensions:**
  ❍ Extra dimensions propose that the **universe has more than the three dimensions** of space and one dimension of time that we are familiar with.
  ❍ The idea is that there **may be additional dimensions that are "curled up"** or compactified and are too small to be detected by our current experiments.
  ❍ The concept of extra dimensions arises in certain theories of gravity, such as **string theory, which suggest that gravity is stronger than expected** at small distances because it "feels" extra dimensions.

What are the Related Challenges?
➢ The LHC faces many technical challenges, such as **maintaining the stability of the magnets and avoiding collisions** between particles and the pipe's walls.

➢ The LHC generates enormous amounts of data. Handling and processing this data is a challenge that **requires advanced computing and storage systems.**
➢ The LHC is an international collaboration that involves thousands of scientists from different countries and institutions. Coordinating this collaboration and ensuring that all participants have access to the data and facilities they need is a challenge.

India Approves Construction of LIGO

Why in News?
  Recently, the government approved the construction of the **Laser Interferometer Gravitational-Wave Observatory (LIGO) project** after seven years of in-principle approval.
➢ It will be built by the **Department of Atomic Energy and the Department of Science and Technology with the U.S. National Science Foundation** and several national and international research institutions.

What is LIGO-India Project?
➢ **About:**
  ❍ The project **aims to detect gravitational waves** from the universe.
  ❍ The Indian LIGO would have **two perpendicularly placed 4-km long vacuum chambers,** that constitute the most sensitive interferometers in the world.
  ❍ It is expected to begin scientific runs **from 2030.**
➢ **Location:**
  ❍ It will be located in the **Hingoli district of Maharashtra**, about 450 km east of Mumbai.
➢ **Purpose and Significance:**
  ❍ It **will be the fifth node** of the planned network and will bring India into a **prestigious international scientific experiment**.
  ❍ It will make India a unique platform that brings together the frontiers of science and technology of the **quantum and the cosmos**.
➢ **Benefits of LIGO-India:**
  ❍ The LIGO-India project would have **several spin-off benefits** to Indian science, apart from making India an **integral part of** one of the **most prestigious international scientific experiments.**

Note:

○ The observatory is expected to enable dramatic returns in astronomy and **astrophysics,** as well as leapfrog Indian science and **technology in cutting-edge** frontiers of great national relevance.

What are Gravitational Waves?

➢ Gravitational waves were first postulated (1916) in **Albert Einstein's General Theory of Relativity,** which explains how gravity works.

➢ These waves are produced by the movement of massive celestial bodies, such as black holes or neutron stars, and are the ripples in spacetime that propagate outward.

What is LIGO?

➢ **About: LIGO is an international network of laboratories that detect gravitational waves.**

○ LIGOs are designed **to measure changes in distance that are several orders of magnitude smaller than the length of the proton.** Such high precision Instruments are needed because of the extremely low strength of gravitational waves that make their detection very difficult.

➢ **First Detection of Gravitational Waves:**

○ The LIGO in the US first detected **gravitational waves in 2015,** which led to a **Nobel Prize in Physics in 2017**.

LIGO – A GIGANTIC INTERFEROMETER

GRAVITATIONAL WAVE   BLACK HOLE   SPACETIME

MIRROR

3 The light waves bounce and return.

MIRROR

4 km

2 A "beam splitter" splits the light and sends out two identical beams along the 4 km long arms.

1 Laser light is sent into the instrument to measure changes in the length of the two arms.

4 A gravitational wave affects the interferometer's arms differently; when one extends the other contracts as they are passed by the peaks and troughs of the gravitational waves.

5 Normally, the light returns unchanged to the beam splitter from both arms and the light waves cancel each other out.

LASER

LIGHT WAVES CANCEL EACH OTHER OUT

BEAM SPLITTER   LIGHT DETECTOR

6 If the arms are disturbed by a gravitational wave, the light waves will have travelled different distances. Light then escapes through the splitter and hits the detector.

LIGHT WAVES HIT THE LIGHT DETECTOR

BEAM SPLITTER   LIGHT DETECTOR

● These gravitational waves were produced **by the merger of two black holes, which were about 29 and 36 times the mass of the Sun,** 1.3 billion years ago.

● Black hole mergers are **the source of some of the strongest gravitational waves.**

➢ **Operational LIGO:**

○ Besides **the United States (in Hanford and Livingston),** such gravitational wave observatories are currently **operational in Italy (Virgo) and Japan (Kagra).**

● **To detect gravitational waves,** four comparable detectors need to be operating simultaneously around the globe.

➢ **Working Mechanism:**

○ LIGO consists of two 4-km-long vacuum chambers, set up at **right angles to each other, with mirrors at the end.**

Note:

○ When light rays are released simultaneously in both chambers, they should return at the same time.

○ However, **if a gravitational wave arrives, one chamber gets elongated while the other gets squished, causing a phase difference in the returning light rays**.

● Detecting this phase difference confirms the presence of a gravitational wave.

Genome India Project

Why in News?

Government aims to sequence 10,000 genomes by the end of the year 2023 under the **Genome India Project (GIP).**

➢ The Department of Biotechnology, Ministry of Science and Technology has sequenced close to 7,000 genomes and 3,000 of these are already available for public access.

Road to Future

Aim of Genome Mapping Project

Developing therapies for diseases such as cancer and other rare ones

Predictive diagnosis and precision medicine

22 Partner organisations to be roped in

Dept of Biotechnology has initiated the project

10,000 Number of Indians whose genomic data will be catalogued in phase 1
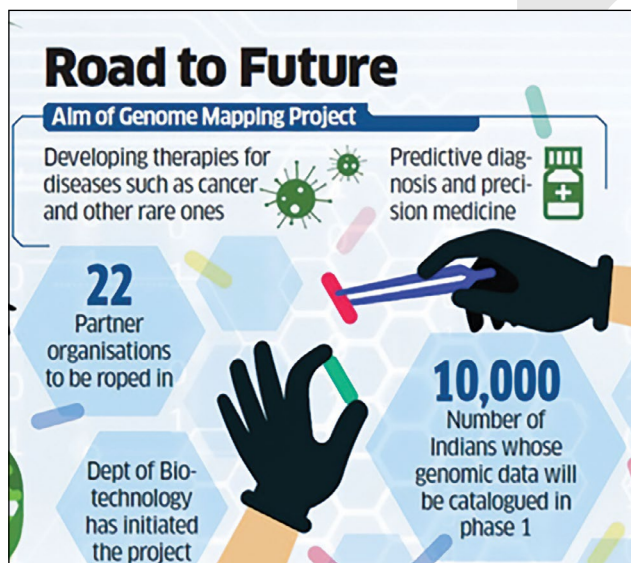
What is the Genome India Project?

➢ **Need:**

○ India's population of **1.3 billion is made up of over 4,600 diverse population groups,** many of which are endogamous (Matrimony in Close Ethnic Groups).

○ These groups have **unique genetic variations and disease-causing mutations** that cannot be compared to other populations.

● By creating a database of Indian genomes, researchers can learn about these unique

genetic variants and use the information to create personalized drugs and therapies.

○ The **United Kingdom, China, and the United States** are among the countries that **have programmes to sequence at least 1,00,000 of their genomes.**

➢ **About:**

○ It is a scientific initiative inspired by the **Human Genome Project (HGP),** an international effort that successfully decoded the entire **human genome between 1990 and 2003.**

○ The project was started **in 2020**, aiming to **better understand the genetic variations and disease-causing mutations** specific to the Indian population, which is one of the most genetically diverse in the world.

○ By sequencing and analyzing these genomes, researchers hope to gain insights into the **underlying genetic causes of diseases and develop more effective personalized** therapies.

○ The project involves the collaboration of 20 institutions across India and is being **led by the Centre for Brain Research at the Indian Institute of Science** in Bangalore.

What is the Significance of the GIP?

➢ **Precision Healthcare:**

○ GIP aims to develop personalized medicine based on **patients' genomes to anticipate and modulate diseases.**

○ By mapping disease propensities to genetic variations, interventions can be targeted **more effectively, and diseases can be anticipated before they develop.**

● For example, variations across genomes may explain **why cardiovascular disease leads to heart attacks in South Asians** but to strokes in most parts of Africa.

➢ **Sustainable Agriculture:**

○ Similar benefits will come to agriculture if there is a better understanding of the **genetic basis of the susceptibility of plants to pests**, insects and other issues hampering productivity.

○ This can **reduce dependence** on chemicals.

➢ **International Cooperation:**

○ Global science will also benefit from a **mapping project in one of the world's most diverse gene pools.**

Note:

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❍ The project is said to be among the most significant of its kind in the world because of its **scale and the diversity it would bring to genetic studies.**

What are the Challenges?

➢ **Scientific Racism:**
  ❍ The GIP raises concerns about the **potential for scientific racism and the reinforcement of stereotypes** based on heredity and racial purity. Similar scientific studies in the past have been used to **justify slavery and other forms of discrimination.**
  ❍ In a country like India, which is already divided by identity politics, genetic mapping may **further deepen these divisions.**

➢ **Data Privacy:**
  ❍ The project also raises questions about **data privacy and storage.** In the absence of a comprehensive data privacy bill in India, concerns about the possible misuse of genetic information collected by the GIP cannot be overlooked.

➢ **Ethical Concerns:**
  ❍ It raises ethical questions about the **potential for doctors to privately perform gene modification** or selective breeding.
  ❍ Such practices have always been controversial, in 2020 there was sentencing of a scientist in China who **created the world's first gene-edited babies highlighting the seriousness** of these concerns.

What is a Genome?

➢ The discovery of the structure of DNA by Watson and Crick in 1953 marked the beginning of the **study of genetics, which seeks to understand how genes** influence **traits and diseases.**
  ❍ **DNA, or Deoxyribonucleic acid**, is a molecule that carries the **genetic instructions for the development, functioning, growth, and reproduction** of all living organisms.

➢ The genome of an organism is the **complete set of its genetic material,** including all of its genes. It contains all the information required to build and maintain the organism.

➢ In humans, the genome is **composed of more than 3 billion DNA base pairs**, arranged in a double helix structure.

➢ The study of genomics, which involves the analysis of genomes, has revolutionized many fields, including **biotechnology, medicine, and agriculture, by providing new insights into the mechanisms of disease**, drug development, and the improvement of crops and livestock.

What is Genome Sequencing?

➢ Genome sequencing is figuring out the order of DNA nucleotides, or bases, in a genome—the order of adenine (A), thymine (T), cytosine (C), and guanine (G), that make up an organism's DNA.

Countries Regulating on AI and Chatbots

Why in News?

Italy has recently banned ChatGPT due to concerns over the **collection of personal data** and the **lack of guardrails to prevent minors from accessing the AI chatbot.**

What are the Other Countries Regulating AI and Chatbots?

➢ **India:**
  ❍ **NITI Aayog,** has issued some guiding documents on AI Issued such as the **National Strategy for Artificial Intelligence and the Responsible AI for All report.**
  ❍ Emphasises **social and economic inclusion, innovation, and trustworthiness.**

➢ **European Union:**
  ❍ Proposed legislation called the **European AI Act** to introduce a common regulatory framework for AI.
    ● The AI Act will also work in tandem with other laws such as the **General Data Protection Regulation (GDPR).**
  ❍ **Classifies different AI tools according to perceived risk level** and imposes different obligations and transparency requirements.
  ❍ **May include ChatGPT under the General Purpose AI Systems** category, which describes tools that can perform multiple functions.

Note:

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- **United Kingdom:**
  - Outlined a **light-touch approach,** asking regulators in different sectors to apply existing regulations to AI.
  - Published a **white paper outlining five principles companies should follow**: safety, security and robustness; transparency and explainability; fairness; accountability and governance; and contestability and redress.
- **China:**
  - While **China hasn't officially blocked ChatGPT,** OpenAI does not allow users to sign up for the chatbot in the country.
    - OpenAI also blocks users from other countries with heavy internet censorship such a**s Russia, North Korea, Egypt, Iran, Ukraine**, and a few more.

> **Note: Till** yet, US doesn't have comprehensive federal legislation on AI and Chatbot yet.

What are the Concerns Related to Rising AI Software and Chatbots?

- **Privacy:**
  - Training AI models requires **access to large amounts of data, which could include personal and sensitive information.**
    - There is a risk that this **data could be used for unethical purposes,** such as for targeted advertising or for political manipulation.
- **Responsibility:**
  - Since **AI models can generate new content, such as images, audio, or text** it **may be used to generate fake news or other malicious content,** without knowing who is responsible for the output.
    - This could lead to **ethical dilemmas over responsibility.**
- **Automation and Lowering Job:**
  - **AI has the potential to automate many processes,** which could lead to **job displacement for people who are skilled in those areas.**
    - This **raises questions about the ethics of using AI for** job displacement and the potential impact on workers and society.

Conclusion

Regulations and standards must be put in place to ensure that AI models are used in a **responsible and ethical manner.** AI models are **only as good as the data they are trained on,** so it is important to ensure that the **data used for training AI models is ethical and unbiased**. This includes **ensuring that the data used for training is collected and used in a way that respects the privacy of individuals** and does not reinforce existing biases.

Indian Space Policy 2023

Why in News?

The **Indian Space Policy 2023** was approved by the **Cabinet Committee on Security.** The policy **seeks to institutionalise private sector participation in the space sector,** with ISRO focusing on **research and development of advanced space technologies.**

What are the Major Provisions of Indian Space Policy 2023?

- **About:**
  - The policy will pave the **way forward with much-required clarity in space reforms** and augment private industry participation to drive the space economy opportunity for the country.
- **Delineation of Roles:**
  - The policy delineates the roles and responsibilities of **Indian Space Research Organisation (ISRO), space sector PSU NewSpace India Limited (NSIL),** and **Indian National Space Promotion and Authorization Center (IN-SPACe).**
  - **Strategic activities related to the space sector will be carried out by NSIL,** which will work in a demand-driven mode.
  - **IN-SPACe** will be the interface between **ISRO and non-governmental entities.**
  - **ISRO** will **focus its energies on developing new technologies**, new systems and research and development.
  - The operational part of ISRO's missions will be moved to the **NewSpace India Limited.**
- **Entry of Private Sector:**
  - The policy will allow the **private sector to take part in end-to-end space activities** that include building satellites, rockets, and launch vehicles, data collection and dissemination.

○ The **private sector can use ISRO facilities** for a small charge and is encouraged to invest in creating new infrastructure for the sector.

➤ **Impact:**

○ The policy will help India increase its share in the global space economy substantially from less than **2% to 10% in the future.**

What is the Current Status of India's Space Sector?

➤ **About:**

○ The **Indian Space Sector has been globally recognised for building cost-effective satellites**, and now India is even taking foreign satellites to space.

○ As part of I**ndia's commitment to the Geneva Conference on Disarmament,** the country continues to advocate peaceful and civilian use of outer space and oppose any weaponization of space capabilities or programs.

○ ISRO is the **6th largest space agency in the world** and holds an exceptional success rate.

● With over **400 private space companies**, India ranks fifth globally in no. of space companies.

➤ **Recent Developments in India's Space Sector:**

○ **Defence Space Agency:** India has recently set up its **Defence Space Agency (DSA) supported by the Defence Space Research Organisation (DSRO)** that has the mandate to create weapons to "**degrade, disrupt, destroy or deceive an adversary's space capability**".

● Also, the Indian Prime Minister launched th**e Defence Space Mission** at the Defence Expo 2022, Gandhinagar.

○ **Expanding Satellite Manufacturing Capabilities:** India's satellite-manufacturing opportunity **will reach USD 3.2 billion by the year 2025** (in 2020 it was USD 2.1 billion)

○ **SAMVAD Program:** To encourage and nurture space research among young minds, ISRO launched its **Student Outreach Program called SAMVAD** at its Bengaluru facility.

What are Current Major Challenges Related to the Space Sector?

➤ **Lack of Regulations on Commercialisation:** The **commercialization of outer space** is accelerating due

to the development of private satellite expeditions for **Internet services (Starlink-SpaceX) and for space tourism.**

○ It is possible that if **no regulatory framework is put in place,** rising **commercialisation may lead to monopolisation in the future.**

➤ **Rising Space Debris:** As outer space expeditions increase, **more space debris will accumulate**. Because objects orbit Earth at such high speeds, **even a small piece of space debris can damage a spacecraft.**

➤ **China's Space Leap**: Compared to other countries, the Chinese space industry has grown rapidly. It has **successfully launched its own navigation system, BeiDou.**

○ It is very likely that China's Belt Road Initiative (BRI) members will contribute to or join the Chinese space sector, **solidifying China's global position and may lead to weaponization of outer space.**

➤ **Increasing Global Trust Deficit:** An **arms race for weaponization of outer space is** creating an **environment of suspicion, competition, and aggressiveness** across the globe, potentially leading to conflict.

○ It would also **put at risk the entire range of satellites as well as those involved in scientific explorations** and communication services.

India in Space Domain

India's Space Journey – Beginning	India & World Space Domain
▪ 1962 - INCOSPAR estd. by Dr. Vikram Sarabhai ▪ 1963 - US supplied rocket Nike-Apache was launched at Thumba (Kerala)	▪ 6th largest player in global space industry; ~3.6% of the world's space-tech companies (as of 2021)
Early Days ▪ 1969 - INCOSPAR became ISRO ▪ 1975 - ▪ India's first satellite - Aryabhatta launched ▪ Satellite Instructional Television Experiment (SITE) launched ● India's 1st major project; attempted to use	▪ US holds leader's spot (56.4% of all companies in space-tech ecosystem) ▪ Other top 5 players - UK (6.5%), Canada (5.3%), China (4.7%) and Germany (4.1%) **Indian Pvt Companies**

3D Printed Cryogenic Engine and Space Sector Privatisation

Why in News?

Indian private space vehicle company - **Skyroot Aerospace** - recently test-fired its **3D-printed** cryogenic engine - Dhawan II, developed for its heavier vehicle - Vikram II.

Note:

➤ Earlier in November 2022, Skyroot launched **India's first privately developed rocket Vikram-S.**

➤ This adds to the growth story of India's **space sector privatisation**.

What is 3D Printing?

➤ **3D printing is also known as additive manufacturing** which uses materials such as plastics and metals to convert products envisaged on computer-aided design to real three-dimensional items.

○ It is the opposite of **subtractive manufacturing** which is cutting out/hollowing out a piece of metal or plastic with, for instance, a milling machine.

➤ 3D printing traditionally has been used for prototyping and **has a lot of scope in making artificial limbs, stents, dental crowns, parts of automobiles and consumer goods,** among others.

What is a Cryogenic Engine?

➤ **About:**

○ A cryogenic engine/ cryogenic stage is the **last stage of space launch vehicles which makes use of Cryogenics.**

● Cryogenics - the **study of the production and behaviour of materials at extremely low temperatures** (below -150℃) to lift and place the heavier objects in space.

○ It uses **Liquid Oxygen (LOx) and Liquid Hydrogen (LH$_2$)** as propellants.

○ They are **one of the hardest to develop** and so far only 6 countries have these launch vehicles - the **US, China, Russia, France, Japan, and India.**

● India's heaviest launch vehicles – **GSLV and GSLV Mk III** – use cryogenic fuel in the upper stage of the launch vehicle.

➤ **Advantages:**

○ It is **more efficient and provides more thrust** for every kilogram of propellant it burns compared to solid and earth-storable liquid propellant rocket stages.

○ Using a cryogenic upper stage instead of a solid fuel stage **enhances the payload carrying capacity of a rocket.**

○ Both fuels (LOx and LH$_2$) are **environment-friendly** compared to other solid, semi-cryogenic and hypergolic propellants used in the rocket industry.

➤ **Disadvantage:**

○ It is technically a **much more complex system** as against solid/earth-storable liquid propellant stages due to the usage of propellants at extremely low temperatures and the **associated thermal and structural problems.**

What is Dhawan II?

➤ The Dhawan cryogenic engine series of Skyroot is named in honour of **Satish Dhawan, an eminent Indian rocket scientist** who played a crucial role in the development of India's space programme.

➤ Dhawan II builds upon Skyroot's first privately developed fully-cryogenic rocket engine - Dhawan–I**,** which was successfully test fired in 2021.

○ It is **completely indigenous** and used a superalloy for 3D printing the engine, which **reduced the manufacturing time by 95%.**

➤ It will use Liquid Natural gas (LNG) and Liquid Oxygen (LoX) as propellants.

○ **LNG is more than 90% methane** and is **considered the rocket fuel of the future.**

➤ The engine development was **partly supported by NITI Ayog's ANIC-ARISE program** which promotes technologies including the use of green rocket propellants.

What are the Initiatives in Privatisation of the Space Sector?

➤ **IN-SPACE:**

○ **IN-SPACE** was launched to provide a **level playing field for private companies to use Indian space infrastructure.**

○ It **acts as a single-point interface** between **Indian Space Research Organisation (ISRO), and everyone** who wants to participate in space-related activities or use India's space resources.

➤ **NewSpace India Limited (NSIL):**

○ **NewSpace India Limited (NSIL)** aims to use R&D carried out by ISRO over the years for **commercial purposes through Indian industry partners.**

➤ **Indian Space Association (ISpA):**

○ **Indian Space Association (ISpA) is the apex, non-profit industry body** exclusively working towards the successful exploration, collaboration, and development of the private and public Space Industry in India.

Note:

➢ **Vikram Series of Skyroot:**
  ○ **Vikram - named after Dr. Vikram Sarabhai,** founder of the Indian Space Program - is a series of **modular Space launch vehicles** especially crafted for the small satellite market.
    ● It has 4 variants: **Vikram S, Vikram, Vikram II** and **Vikram III.**
  ○ **Vikram S**, made Skyroot the **first Indian private company to send a rocket into space.**
    ● **Vikram II** rocket is scheduled to become launch-ready by 2024 which will make the company the **first private launcher from South Asia.**

How is Privatisation of the Space Sector Significant?

➢ The global space economy is currently valued at about USD 360.1 billion, however, **India accounts for only ~2% of the space economy.** The private players in the industry have been limited to being vendors/ suppliers to the govt.'s space program.
  ○ Enhanced participation of **Non-Governmental Entities (NGEs)** in the space sector will **boost India's market share in the Global Space Economy.**
➢ Promoting the private sector will **enable the Indian space program to remain cost competitive** within the global space market, and thus **create several jobs** in the space and other related sectors.
  ○ This will **help India to position itself as a global leader in space technology** and innovation.
➢ **Private players can bring in new technologies**, innovation, and management skills, leading to **cost optimisation and increased efficiency** in space-related activities.
  ○ This will also **free up government resources to focus on other critical sectors.**

> ### Note:
> ➢ **India is the 6ᵗʰ-largest player in the space industry** internationally, having **~3.6% of the world's space-tech companies** (as of 2021).
> ➢ The US holds the leader's spot housing 56.4% of all companies in the space-tech ecosystem followed by the UK (6.5%), Canada (5.3%), China (4.7%) and Germany (4.1%).

Dark Matter

Why in News?

Recently, researchers have created a **detailed map of the invisible dark matter that makes up 85% of the universe**.

What do the Findings Suggest?

➢ The new findings **align with the standard model of cosmology based on Einstein's theory of gravity.**
➢ The researchers used the **Atacama Cosmology Telescope (ACT)** to map dark matter **using light from the early universe**, known as the **cosmic microwave background (CMB) radiation.**
➢ They used the CMB radiation to map dark matter by observing **how it interacts with the gravity of massive objects like galaxy clusters and lumps** of dark matter.
  ○ The **gravitational field** generated by these objects **bends and distorts the light** that passes through them, which **helps in detecting dark matter.**

What is Dark Matter?

➢ **About:**
  ○ Dark matter is a **hypothetical form of matter** that is believed to exist in the universe but is **invisible and does not interact with light.**
➢ **Importance of Dark Matter:**
  ○ Dark matter is essential to **explaining the observed structure of the universe.**
  ○ It helps to **account for the distribution of matter in galaxies and the cosmic web**. Understanding dark matter is important for developing a **complete understanding of the universe and its evolution.**
➢ **Dark Energy:**
  ○ It is a type of energy that is thought to be responsible for the **accelerating expansion of the universe.**
    ● It is a form of energy that fills the entire universe and exerts a **negative pressure**, pushing galaxies and other matter away from each other.
  ○ Dark energy is estimated to make up about **68% of the total energy content of the universe.**
➢ **Evidence Related to Dark Matter:**
  ○ There is strong **indirect evidence,** as reflected in various levels like **distance scales:**

- For example, as **we move from the centre of the galaxy to its periphery,** there is a **significant disparity between the observed plot of star speeds and their estimated figure.**
- This implies that th**e galaxy has a significant amount of dark matter.**
  - ❍ **Other Distance Scale Evidence:**
    - There are **Bullet clusters of galaxies** that are formed through the **merging of two galaxies**, as per scientists **their merger could only be explained through the presence of some dark matter.**

Ultramassive Black Hole

Why in News?

Astronomers have discovered an **ultramassive black hole** using **gravitational lensing**, a phenomenon where a **foreground object bends light from a distant object behind it**.

What led to the Discovery of an Ultramassive Black Hole?

➢ Researchers used **supercomputer simulations** to **simulate light from a distant galaxy travelling through the Universe**, each simulation had a **black hole** of a different mass.

➢ The path taken by the light in one simulation matched the path seen in actual images captured by the **Hubble Space Telescope**, leading to the discovery of an **ultramassive black hole in the foreground galaxy.**

➢ The ultramassive black hole is over **30 billion times** the mass of our Sun.

➢ This new approach using gravitational lensing could make it possible to study **inactive black holes in distant galaxies.**

➢ However, most black holes that are currently known are in an **active state,** pulling in matter from their surroundings and **releasing energy as light, X-rays and other radiation.**

What is a Black Hole?

➢ **About:**
  - ❍ Black holes are regions of space-time where **gravity is so strong that nothing, not even light, can escape from them.**

  - ❍ They are formed when a **massive star collapses in on itself at the end of its life,** creating an incredibly dense object with a gravitational pull that is so strong that it **warps space-time around it.**

➢ **Types of Black Holes:**
  - ❍ **Stellar Black Hole:** It is formed by the **collapse of a single massive star.**
  - ❍ **Intermediate Black Hole:** Their masses are between **100 and 100,000 times that of the sun.**
  - ❍ **Supermassive Black Hole:** Their masses ranging from **millions to billions of times that of the sun**, found at the centres of most galaxies including our own **Milky Way galaxy.**

➢ **Importance:**
  - ❍ Black holes are important fo**r understanding the universe and its evolution.**
  - ❍ They play a role in the **formation and evolution of galaxies** and the distribution of matter throughout the universe.
  - ❍ Studying black holes can also help us **understand the fundamental properties of space, time, and gravity.**
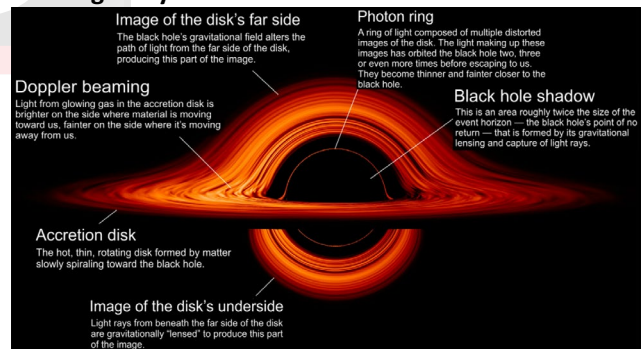
What is Gravitational Lensing?

➢ **Gravitational lensing** is a phenomenon where the **path of light from a distant object is bent by the gravitational field** of a massive object, such as a **galaxy or a black hole**.

➢ This bending of light can **cause distant objects to appear distorted or magnified,** depending on the alignment of the massive object and the observer.

➢ The effect of gravitational lensing was first predicted by **Albert Einstein in his theory of general relativity**, and has since been observed and studied by astronomers.

Note:

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Conclusion

The discovery of this ultramassive black hole using gravitational lensing is an **exciting development in the study of black holes**. The technique used could lead to the discovery and study of more **inactive black holes in distant galaxies**.

BLACK HOLES

ABOUT

- A place in space with extremely high gravity pull; even light can't escape (hence, invisible)
- The strong gravity is due to matter being squeezed into a tiny space

> The term 'black hole' was coined in the mid-1960s by American physicist John Archibald Wheeler

DETECTION

- By seeing how stars very close to black holes act differently than other stars
- In April 2019, scientists at the Event Horizon Telescope Project released the first-ever image of a Black Hole (shadow, more precisely)

Albert Einstein and Black Hole

- First predicted their existences in Theory of General Relativity
- It showed that when a massive star dies, it leaves behind a small, dense remnant core

> India's first dedicated satellite, AstroSat observed for the very first-time rapid variability of high energy X-ray emission from a black hole system

TYPES

- Miniature (Hypothetical):
  - The smallest; size of just 1 atom
  - Mass: varies from 1/100th of a milligram to the mass of a large mountain
  - Believed to be formed when universe began
- Stellar:
  - Mass: 20x the mass of sun
  - Believed to be formed due to Supernovae explosion

> Supernova is an exploding star that has reached the end of its life

- Supermassive
  - The largest
  - Mass: >1 million suns together
  - Every large galaxy has a supermassive black hole at its centre
  - Believed to be made at the same time as their home galaxy

> Sagittarius A is the supermassive black hole at the centre of Milky Way (mass: ~about 4 mn suns)

> The Sun will never turn into a black hole as it is not big enough to make a black hole

Singularity
At the very centre of a black hole, matter has collapsed into a region of infinite density called a singularity. All the matter and energy that fall into the black hole ends up here. The prediction of infinite density by general relativity is thought to indicate the breakdown of the theory where quantum effects become important.

Event horizon
This is the radius around a singularity where matter and energy cannot escape the black hole's gravity: the point of no return. This is the "black" part of the black hole.

Photon sphere
Although the black hole itself is dark, photons are emitted from nearby hot plasma in jets or an accretion disc (see below). In the absence of gravity, these photons would travel in straight lines, but just outside the event horizon of a black hole, gravity is strong enough to bend their paths so that we see a bright ring surrounding a roughly circular dark "shadow".

Relativistic jets
When a black hole feeds on stars, gas or dust, the meal produces jets of particles and radiation blasting out from the black hole's poles at near light speed. They can extend for thousands of light-years into space.

Innermost stable orbit
The inner edge of an accretion disc is the last place that material can orbit safely without the risk of falling past the point of no return.

Accretion disc
A disc of superheated gas and dust whirls around a black hole at immense speeds, producing electromagnetic radiation (X-rays, optical, infrared and radio) that reveal the black hole's location. Some of this material is doomed to cross the event horizon, while other parts may be forced out to create jets.

Relativistic Jet
Accretion disc
Event horizon
Singularity
Photon sphere
Innermost stable orbit

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Note:

Environment & Ecology

Highlights

- *New Butterfly Species Discovered in Kerala*
- *Invasive Species in Gulf of Mannar Islands*
- *Tiger Census 2022*
- *Bandipur Tiger Reserve*
- *Protest of Idu Mishmis over Proposed Tiger Reserve*
- *State Energy Efficiency Index 2021-22*
- *River Rejuvenation*
- *Radioactive Materials in Recycling Chain*

- *Great Nicobar Island Project*
- *Megafauna Bias Hampers Carnivore Conservation Efforts*
- *Challenges and Solutions for Managing Solar PV Waste in India*
- *Impacts of Hydropower Projects in the Himalayan Region*
- *Salt Marshes Succumb to Sea Level Rise*
- *Conference on Human-Wildlife Conflict*
- *Rapidly Melting Antarctic Ice*

New Butterfly Species Discovered in Kerala

Why in News?

Recently, a butterfly subspecies(*Caltoris bromus sadasiva*) from the fringes of Akkulam and **Vembanad lakes** in Kerala has been discovered.

What are the Key Points Related to the Discovery?

➢ **About:** It belongs to the skipper butterfly family of Lepidoptera **(moths and butterflies)**.

➢ It is the **first documented** subspecies of the **Bromus swift** (*Caltoris bromus)* butterfly in the **Western Ghats** and Peninsular India.

➢ **Number of Butterfly Species:** The discovery of *Caltoris bromus sadasiva* brings the **count of butterfly species** in the Western Ghats to **336** and the count of **skipper butterflies to 83,** with the **last skippe**r **butterfly** discovery being almost **75 years ago**.

➢ **Caltoris:** *Caltoris,* an Indo-Australian genus has over 15 species distributed across south-east Asia. *Caltoris bromus*, one of them, has two other subspecies *Caltoris bromus bromus* and *Caltoris bromus yanuca*.

What are the Key Facts about Vembanad Lakes?

➢ This is the largest lake in Kerala and the **longest Lake in India**.

➢ Vembanad Lake is **also known as Vembanad Kayal**, **Vembanad Kol, Punnamada** Lake (in Kuttanad) and **Kochi Lake** (in Kochi).

➢ The lake has its **source** in four rivers, **Meenachil, Achankovil, Pampa and Manimala.**

Note:

- ➢ It is **separated** from the **Arabian Sea** by a narrow barrier island and is a popular backwater stretch in Kerala.
- ➢ In 2002, it was **included in** the list of wetlands of international importance, as defined by the **Ramsar Convention**.
- ➢ It is the **second-largest Ramsar site in India** only after the **Sundarbans** in West Bengal.

Invasive Species in Gulf of Mannar Islands

Why in News?

A recent study has revealed that the native vegetation and biodiversity in the **Gulf of Mannar** **are under threat from an alien invasive plant,** *Prosopis chilensis*.

- ➢ In addition, the **coral reef has been destroyed in several places despite being outlawed for industrial purposes**, and human settlements have impacted some islands.

What are Invasive Species?

- ➢ **About:**
  - ❍ An **invasive species** is an organism that is not indigenous, or native, to a particular area and causes harm to the native species.
    - They are **capable of causing extinctions of native plants and animals,** reducing **biodiversity**, competing with native organisms for limited resources, and **altering habitats.**
  - ❍ They can be **introduced to an area by ship ballast water,** accidental release, and most often, by people.
- ➢ **About Prosopis Chilensis:**
  - ❍ The Chilean mesquite (Prosopis chilensis (Molina) Stuntz) is a small to medium-sized legume tree and has a shallow and spreading root system.
    - It is a common ruderal weed, either growing singly or in groups
  - ❍ It is found in **arid and semi-arid regions with ground water of between 3 and 10 m** below the surface.
    - It is a drought-resistant plant native to **South American countries namely Argentina, Bolivia, Chile, and Peru.**

- ➢ **International Instruments and Programmes on Invasive Species:**
  - ❍ **Convention on Biological Diversity (CBD):**
    - It was one of the key agreements adopted at the 1992 Earth Summit in Rio de Janeiro.
    - The Rio de Janeiro Convention on Biodiversity (1992) had also **recognised the biological invasion of alien species of plants** as the second-worst threat to the environment after habitat destruction.
  - ❍ **Convention on the Conservation of Migratory Species (CMS) or Bonn Convention (1979):**
    - It is an intergovernmental treaty that aims to **conserve terrestrial, marine and avian migratory species throughout their range**.
    - It also aims to **control or to eliminate already present invasive alien species.**
  - ❍ **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):**
    - It is an international agreement adopted in 1975 that aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival.
    - It also considers the **problems of invasive species when it is involved in trade and threatens the survival of live animals or plants.**

- ➢ **Gulf of Mannar:**
  - ❍ It is an **inlet of the Indian Ocean,** between southeastern India and western Sri Lanka.
  - ❍ It is bounded to the northeast by **Rameswaram (island), Adam's (Rama's) Bridge (a chain of shoals), and Mannar Island.**
  - ❍ It receives several rivers, including the **Tambraparni (India) and the Aruvi (Sri Lanka).**
  - ❍ The gulf is noted for its **pearl banks and sacred chank** (a gastropod mollusk).
- ➢ **Gulf of Mannar Biosphere Reserve (GoMBR):**
  - ❍ The **GoMBR is home to 21 islands** that serve as habitats for coastal birds migrating as far as the Arctic Circle.
    - It is India's first marine biosphere reserve.
  - ❍ **Most of the islands have sand dunes along their coastlines** with salt-dominant plant species.
  - ❍ **"Corals, seagrass, and mangroves** are among the three unique ecosystems present on the islands

Note:

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○ **Ramsar Convention (1971):**

- The **Ramsar Convention on Wetlands of International Importance** is an international treaty for the conservation and sustainable use of wetlands.

- It also addresses the **environmental, economic and social impact of invasive species on wetlands** within their jurisdictions and to take account of the methods of control and for combating invasive species.
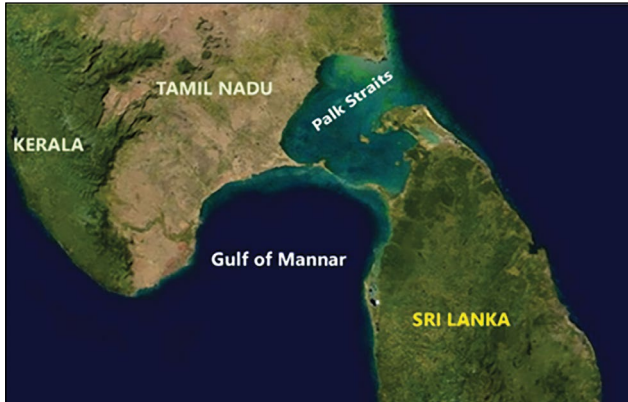
Tiger Census 2022

Why in News?

The Prime Minister of India has released the figures of the 5th cycle of India's **Tiger Census 2022,** revealing 6.7% in the increase in the past four years.

➤ The tiger census **covered forested habitats in 20 states of India**. Camera traps were set up at 32,588 locations and generated 47,081,881 photographs.

➤ The PM has released the Census while inaugurating the **International Big Cat Alliance (IBC)** in Karnataka's Mysuru, organised to mark 50 years of **Project Tiger.**

What is the IBCA?

➤ IBCA is launched for conservation of seven big cats namely Tiger, Lion, Leopard, **Snow Leopard**, Leopard, **Cheetah**, Jaguar and Puma harbouring our planet.

➤ Its members include 97 countries that are home to these big cats and other interested parties.

➤ The IBCA will engage in **advocacy, partnerships, capacity building, eco-tourism, and finance tapping.**

➤ It will also disseminate information and create awareness among its members.

Big cat count

According to the data released by the PM, the number of tigers in India increased by 200 in the past four years. A look at the tiger population

Year	Tiger population
2006	1,411
2010	1,706
2014	2,226
2018	2,967
2022	3,167
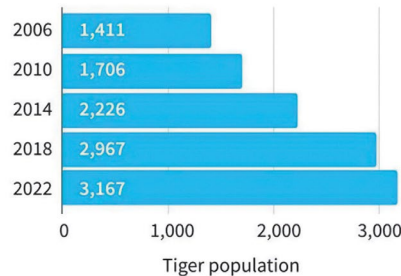
Steady rise: A tiger at Van Vihar National Park in Bhopal on Sunday. PTI

What are the Highlights of the Census?

➤ **Population:**

○ Population has grown by 200 from 2018 to 2022. The current tiger population in India is 3,167, up from 2,967 in 2018.

➤ **Growth Rate:**

○ The growth rate slowed to 6.7% in the four years from 2018 to 2022, from **around 33% during 2014-2018.**

➤ **Increase:**

○ There has been **a significant increase in the tiger population in the Shivalik Hills** and Gangetic Plains, while tiger occupancy in Jharkhand, Odisha, Chhattisgarh, and Telangana showed a decline.

○ The North East Hills and **Brahmaputra** Plains had 194 tigers captured by camera traps, and the region's **Nilgiri cluster is the largest tiger population in the world**, contributing significantly to colonisation of tigers in neighbouring areas.

➤ **Decline:**

○ Tiger occupancy in the Western Ghats declined, the latest analysis showed. Significant declines were observed in the Wayanad landscape and in the Biligiriranga Hills.

➤ **High Conservation Priority:**

○ The genetically unique and **small population of tigers in Simlipal is also highlighted as being of high conservation priority.**

○ The report calls for **ecologically viable economic development** and trans-boundary tiger conservation strategies to sustain isolated populations.

Note:

What is the Need for Conserving Tigers?

➢ **Biodiversity:** Tigers are an apex predator and play a vital role in maintaining the ecological balance of their habitats. They help regulate prey populations, which in turn helps maintain the balance of other species in the ecosystem.

➢ **Tourism:** Tigers are a major tourist attraction in countries like India and help generate revenue through ecotourism. This revenue can support local communities and contribute to the economy.

➢ **Cultural Significance:** Tigers are an important cultural symbol in many cultures and religions, including Hinduism and Buddhism.

➢ **Scientific Research:** Tigers are an important subject of scientific research, as they are a keystone species, and their conservation can help protect other species in their ecosystem.

➢ **Climate Change:** Tigers are an indicator species, which means that their presence or absence can indicate the health of the ecosystem. Conserving tigers can help protect the ecosystem from the effects of climate change.

Tiger Census in India

➢ The national tiger census is **done every four years by the National Tiger Conservation Authority (NTCA)** in partnership with state forest departments, conservation NGOs, and the Wildlife Institute of India (WII). The census uses a double sampling method based on ground-based surveys and images from camera-traps.

What are the Key Points Related to Tiger?

➢ **Scientific Name:** *Panthera tigris*
➢ Indian Sub Species: *Panthera tigris tigris.*
➢ **Habitat:**
  ○ Its habitat stretches from Siberian temperate forests to subtropical and tropical forests on the Indian subcontinent and Sumatra.
  ○ It is the largest cat species and a member of the genus Panthera.
  ○ Traditionally eight subspecies of tigers have been recognized, out of which three are extinct.
    ● **Bengal Tigers:** Indian Subcontinent
    ● **Caspian tiger:** Turkey through central and west Asia (extinct).
    ● **Amur tiger:** Amur Rivers region of Russia and China, and North Korea
    ● **Javan tiger:** Java, Indonesia (extinct).
    ● **South China tiger:** South central China.
    ● **Bali tiger:** Bali, Indonesia (extinct).
    ● **Sumatran tiger:** Sumatra, Indonesia.
    ● **Indo-Chinese tiger:** Continental south-east Asia.
➢ **Threats:**
  ○ Habitat destruction, habitat fragmentation and poaching.
➢ **Protection Status:**
  ○ **Indian Wildlife (Protection) Act, 1972:** Schedule I
  ○ **International Union for Conservation of Nature (IUCN)** Red List: Endangered.
  ○ **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):** Appendix I.
➢ **Tiger Reserves in India**
  ○ **Total Number:** 53 according to NTCA.
  ○ **Largest: Nagarjunsagar Srisailam Tiger Reserve,** Andhra Pradesh on the basis of core area.
  ○ **Smallest:** Orang tiger reserve in Assam on the basis of core area.

Note:

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What are the Related Steps Taken?

➤ **Project Tiger 1973:** Project Tiger is a Centrally Sponsored Scheme of the Ministry of Environment, Forests and Climate Change (MoEFCC) launched in 1973. It provides havens for tigers in the country's national parks.

➤ **National Tiger Conservation Authority (NTCA):** It is a statutory body under the MoEFCC and was established in 2005 following the recommendations of the Tiger Task Force. NTCA has been constituted under has been constituted under section 38 L (1) of Wildlife (Protection) Act, 1972.

➤ **Conservation Assured | Tiger Standards:** CA|TS is a set of criteria which allows tiger sites to check if their management will lead to successful tiger conservation.

Bandipur Tiger Reserve

Why in News?

Bandipur Tiger Reserve, located in Karnataka, completed 50 years as a Project Tiger Reserve on April 1, 2023. The reserve was launched in 1973 by the then Prime Minister, Indira Gandhi, with the aim to stop the decline in population of tigers.

➤ Initially, there were 12 tigers in Bandipur when Project Tiger was launched, as a result of protection measures, there are currently 173 tigers using the area.

What are the Key Points of Bandipur Tiger Reserve?

➤ **About:**
   ○ **Bandipur Tiger Reserve** lies in one of the richest biodiversity areas of our country representing **"Western Ghats Mountains Biogeography Zone"**, surrounded by **Mudumalai Tiger Reserve (Tamil Nadu) in the South, Wayanad Wildlife Sanctuary (Kerala) in the Southwest** & on the **North West Side the Kabini Reservoir separates the Bandipur and Nagarahole Tiger Reserve.**
   ○ The reserve is recognized as one of the **Mega Biodiversity Areas in the country** and is home to rich floral and faunal diversity.

➤ **Establishment:**
   ○ It was established in 1973 under **Project Tiger**. In 1985, by including adjacent areas from **Venugopala Wildlife Park,** it was enlarged and named Bandipur National Park.

➤ **Location:**
   ○ It is situated in two contiguous districts (Mysore and Chamarajanagar) of Karnataka and is located at the **tri-junction area of the States Karnataka, Tamil Nadu and Kerala.**

➤ **Biosphere Reserve:**
   ○ The **Bandipur Tiger Reserve is part of the Mysore Elephant Reserve and is an important component of the country's first biosphere reserve, the Nilgiri Biosphere Reserve.**
   ○ The landscape spanning Bandipur, Nagarahole, Mudumalai, and Wayanad complex is home not only to the highest number of tigers in the country – about 724, but also to the largest **Asian Elephant population.**

➤ **Rivers and the Highest Point:**
   ○ The park is located between the **Kabini river** in the north and the **Moyar river** in the south. The **Nugu river** runs through the park. The highest point in the park is on a hill called **Himavad Gopalaswamy Betta.**

➤ **Other Tiger Reserves in Karnataka:**
   ○ Bhadra Tiger Reserve
   ○ **Nagarahole Tiger Reserve**
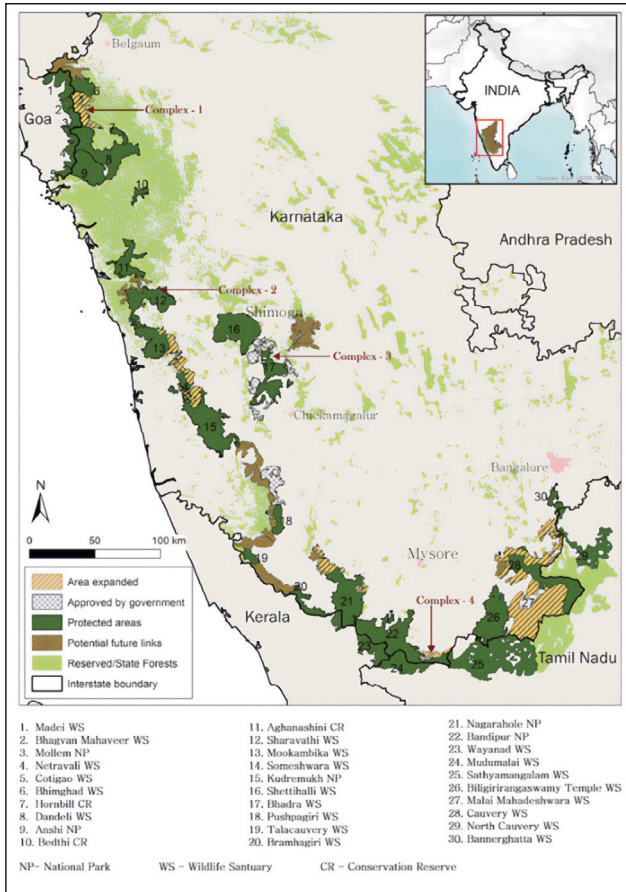   ○ **Dandeli-Anshi Tiger Reserve**

Biligiriranganatha Swamy Temple (BRT) Tiger Reserve, Besides, **Malai Mahadeshwara Wildlife Sanctuary** has been proposed to be made a tiger reserve.

Note:

1. Madei WS
2. Bhagvan Mahaveer WS
3. Mollem NP
4. Netravali WS
5. Cotigao WS
6. Bhimghad WS
7. Hornbill CR
8. Dandeli WS
9. Anshi NP
10. Bedthi CR
11. Aghanashini CR
12. Sharavathi WS
13. Mookambika WS
14. Someshwara WS
15. Kudremukh NP
16. Shettihalli WS
17. Bhadra WS
18. Pushpagiri WS
19. Talacauvery WS
20. Bramhagiri WS
21. Nagarahole NP
22. Bandipur NP
23. Wayanad WS
24. Mudumalai WS
25. Sathyamangalam WS
26. Biligirirangaswamy Temple WS
27. Malai Mahadeshwara WS
28. Cauvery WS
29. North Cauvery WS
30. Bannerghatta WS

NP– National Park   WS – Wildlife Sanctuary   CR – Conservation Reserve

Protest of Idu Mishmis over Proposed Tiger Reserve

Why in News?

Recently, **National Tiger Conservation Authority (NTCA)** announced that the **Dibang Wildlife Sanctuary** in Arunachal Pradesh would soon be notified as a tiger reserve.

➢ This move has caused unrest among the Idu Mishmi tribe who feel that a tiger reserve would "hinder their access" to the forest.

Who are the Idu Mishmis ?

➢ Idu Mishmi is a **sub-tribe of the Mishmi group** in Arunachal Pradesh and neighbouring Tibet, primarily living in the Mishmi Hills bordering Tibet.

○ Their ancestral homelands are spread over the districts of **Dibang Valley** and Lower Dibang Valley as well as parts of Upper Siang and Lohit.

➢ They are known for their **weaving and craftsmanship skills** and are **estimated** to comprise around **12,000 people** (as per **census 2011**).

➢ Their **language**, also called **Idu Mishmi,** is considered **endangered by UNESCO**.

➢ The tribe has strong ties with the region's rich flora and fauna, and their animist tradition led to unique wildlife conservation practices.

➢ **Tigers** are particularly important to the tribe, and according to their mythology, tigers are their **elder brothers.**

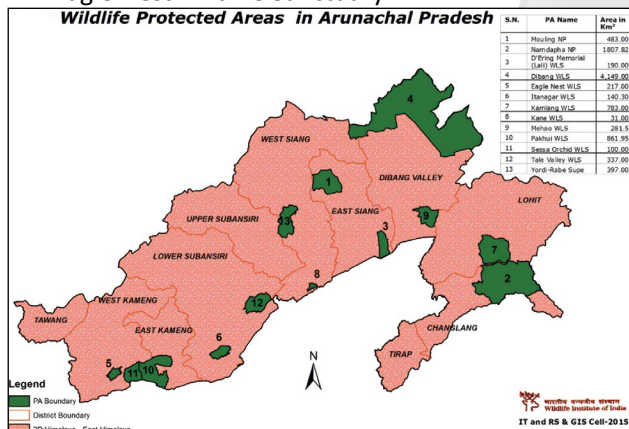### What are the Key Facts about Dibang Wildlife Sanctuary?

➢ **Location:** The Dibang Wildlife Sanctuary is located in the northeastern state of **Arunachal Pradesh** in India.

○ The sanctuary is **named after the Dibang River**, which flows through it.

➢ **Biodiversity hotspot:**

○ It is considered a biodiversity hotspot and is **part of** the **Eastern Himalayas Endemic Bird Area.**

➢ **Flora:**

○ The sanctuary has a diverse range of flora, including **tropical evergreen forests**, **subtropical broadleaf forests, alpine meadows,** and subalpine **coniferous forests**.

○ Some of the important tree species found here include **oak, rhododendron, bamboo, and fir.**

➢ **Fauna:**

○ The Sanctuary is home to several rare and endangered species of animals, including the **Mishmi takin, musk deer, goral, clouded leopard, snow leopard**, and **tiger.**

○ It is also home to several bird species such as the **Satyr tragopan, Blyth's tragopan, and Temminck's tragopan.**

➢ **People:**

○ The sanctuary is home to several indigenous communities, such as **Idu Mishmi.**

➢ **Conservation efforts:**

○ The Dibang Wildlife Sanctuary was **notified in 1998** to protect its rich biodiversity.

○ Over the years, several conservation efforts have been undertaken, including mapping the tiger habitat and counting tigers in the area.

Note:

○ The **proposal to declare** the sanctuary as a **tiger reserve** is part of these efforts.

➤ Threats:

○ The Dibang Wildlife Sanctuary is facing several threats, including **habitat loss, poaching, and human-wildlife conflict.**

○ The **proposed tiger reserve** is expected to provide better protection to the sanctuary's wildlife and their habitat.

What are the Other Protected Areas in Arunachal Pradesh?

➤ **Pakke Wildlife Sanctuary**.

➤ **Namdapha National Park**

➤ **Mouling National Park**

➤ **Kamlang Wildlife Sanctuary**.

➤ **Itanagar Wildlife Sanctuary.**

➤ Eagle Nest Wildlife Sanctuary.

Wildlife Protected Areas in Arunachal Pradesh

S.N.	PA Name	Area in Km²
1	Mouling NP	483.00
2	Namdapha NP	1807.82
3	D'Ering Memorial (Lali) WLS	190.00
4	Dibang WLS	4,149.00
5	Eagle Nest WLS	217.00
6	Itanagar WLS	140.30
7	Kamlang WLS	783.00
8	Kane WLS	31.00
9	Mehao WLS	281.5
10	Pakhui WLS	861.95
11	Sessa Orchid WLS	100.00
12	Tale Valley WLS	337.00
13	Yordi-Rabe Supe	397.00

State Energy Efficiency Index 2021-22

Why in News?

Recently, the **State Energy Efficiency Index (SEEI) 2021-22** has been released by the Union Minister of Power and New & Renewable Energy.

What is the State Energy Efficiency Index?

➤ **About:**

○ The index is developed by the **Bureau of Energy Efficiency (BEE)**, a statutory body under the Ministry of Power, in association with **Alliance for an Energy-Efficient Economy (AEEE).**

○ It assesses the **annual progress of states and UTs in energy efficiency (**energy savings and reduction in emission intensity).

○ The updated framework of **50 indicators is aligned with national priorities, and program-specific indicators** are included to track outcomes and impacts of state-level energy efficiency initiatives.

○ Based on the **progress and accomplishments of states** in energy efficiency implementation, they have been classified into four categories: **Front Runner, Achiever, Contender, and Aspirant.**

➤ **Significance:**

○ India is committed to achieving **NDC goals and transitioning to a net-zero economy by 2070.**

● This requires collaboration between central and state governments, judicious resource allocation, policy alignment, and **regular progress tracking**.

○ **SEEI tracks progress in managing states' and India's energy footprint**, driving energy efficiency policies and programs at the state and local levels.

What are the Key Findings from SEEI 2021-22?

➤ **Front Runner Category (>60 points)**:

○ Andhra Pradesh, Karnataka, Kerala, Rajasthan, and Telangana.

○ **Karnataka, Andhra Pradesh, Assam, and Chandigarh are the top-performing states** in their respective state groups, while **Telangana and Andhra Pradesh** showed the **most improvement since the last index.**

➤ **Achiever Category (50-60 points):**

○ Assam, Haryana, Maharashtra, and Punjab.

What are the Recommendations for States?

➤ Enabling fiscal assistance for energy efficiency in the focus sectors

➤ Developing institutional capacity in states and UTs to address emerging needs and challenges in energy efficiency implementation

➤ Enhancing cross-functional collaborations across financial institutions, energy service companies, and energy professionals in large-scale energy efficiency implementation in states

Note:

➢ Mainstreaming energy data reporting and monitoring across sectors

What is the Bureau of Energy Efficiency?

➢ **About:**
  ○ BEE was established on March 1st, 2002, under the provisions of the **Energy Conservation Act, 2001.**
  ○ The mission of BEE is to **assist in developing policies and strategies for energy efficiency** with the primary objective of reducing the energy intensity of the Indian economy.

➢ **Functions of BEE:**
  ○ BEE is responsible for regulatory and promotional functions as outlined in the Energy Conservation Act, 2001.
  ○ It recognizes, identifies, and utilizes existing resources and infrastructure to perform its functions. BEE works with state governments and utilities to improve energy efficiency implementation.
  ○ BEE's focus on energy efficiency contributes to India's climate commitments and a sustainable future.

River Rejuvenation

Why in News?

The 7.2 Km Kuttamperoor River in Alappuzha, Kerala has been rejuvenated after over a 6-year effort through public participation and government intervention.

➢ It was dead for more than a decade due to waste dumping, encroachments, and other human activities.

➢ It has been rejuvenated through deepening the channel, removing encroachments, constructing bunds on both sides. The revival of the Kuttamperoor river is expected to help **control floods in the region**.

What is River Rejuvenation and its Impact?

➢ **About:**
  ○ River rejuvenation is the process of reviving or restoring the **natural flow and health of a river that has been damaged due to human activities** such as waste dumping, encroachment, and pollution. The process involves removing pollutants, cleaning up riverbeds, and restoring the natural environment around the river.

➢ **Impacts:**
  ○ It can help to **restore the natural habitats of plants and animals,** promote biodiversity, and provide cleaner water for drinking and irrigation.
  ○ Reviving rivers can also **boost tourism in the region and improve the livelihoods** of people who depend on the river for their livelihoods.
  ○ Furthermore, river rejuvenation can help to **control floods and reduce the damage caused by them.** A healthy river can absorb excess water during heavy rains and prevent **flooding** in downstream areas. This can save lives and property and reduce the economic impact of floods.

➢ **Initiatives:**
  ○ In 2022, the Ministry of Environment, Forest and Climate Change released Rs. 19,000–crore Detailed Project Reports (DPRs) on rejuvenation of **13 major rivers through forestry interventions.**
    ● These 13 rivers are Jhelum, Chenab, Ravi, Beas, **Sutlej**, **Yamuna**, **Brahmaputra**, **Narmada**, **Godavari**, **Mahanadi**, **Krishna**, **Cauvery,** and **Luni**.

What are the Other Examples of River Rejuvenation Project?

➢ **Rhine River:** The Rhine River in Europe was once highly polluted but has since undergone a **massive clean-up effort that has transformed it** into a vibrant and thriving ecosystem.

➢ **Singapore River Clean-up:** The Singapore River Clean-up is another successful example of a river rejuvenation project. The project involved cleaning up the highly polluted river and transforming it into a major tourist attraction and a hub of cultural and social activities.

➢ **Thames River Restoration:** The Thames River Restoration project in London, UK, has led to the revival of the river's ecology and the creation of new habitats for wildlife.

➢ **Ganga Action Plan:** In India, the Ganga Action Plan is an ongoing project aimed at cleaning up and **rejuvenating the highly polluted Ganga River.** The project involves a range of interventions, including the construction of sewage treatment plants, the creation of green belts along the riverbanks, and the promotion of eco-friendly activities.

Radioactive Materials in Recycling Chain

Why in News?

The **International Atomic Energy Agency (IAEA)**, has released its annual data on **illicit trafficking of nuclear and other radioactive material.**

➢ The data shows that **radioactive materials or contaminated devices** are entering into the **booming scraps recycling chain, posing a grave health hazard.**

What does the IAEA Data Suggest?

➢ The **IAEA's Nuclear Security Plan** was established to **report incidents of illicit trafficking of nuclear and other radioactive material.**

➢ The latest dataset shows that **incidents of unauthorised disposal of radioactive sources** slipping into scrap metal or waste recycling industries are increasing.

○ The occurrence of such incidents indicates deficiencies in the systems to **control, secure and properly dispose of radioactive material.**

➢ The resulting contaminated metal, if used to **manufacture household goods,** could pose **a potential health problem to unsuspecting consumers.**

○ IAEA reported **146 incidents in 2022,** which is an increase of nearly 38% over the 2021 figure.

What Measures can be Taken to Prevent Radioactive Materials from Entering the Recycling Chain?

➢ **Strengthen Regulatory Frameworks:** Governments need to strengthen their regulatory frameworks and enforcement mechanisms to ensure **proper handling, storage, and disposal of radioactive materials**.

○ This can include **stricter licensing requirements for facilities that handle radioactive materials,** and penalties for non-compliance.

➢ **Improve Monitoring and Control Mechanisms**: Governments should also invest in improving monitoring and control mechanisms to **prevent the illicit trafficking of nuclear and radioactive materials**.

○ This can include the **use of radiation detection equipment at borders and other points of entry,** and more **comprehensive tracking and reporting systems.**

➢ **Encourage the Use of Alternative Materials:** Governments and other stakeholders should encourage the **use of alternative materials that do not pose a risk of radioactive contamination** and promote the development of technologies to extract valuable materials from radioactive waste in a safe and sustainable manner.

What is Radioactivity?

➢ Radioactivity is the phenomenon of **spontaneous emission of particles or waves from the unstable nuclei of some elements.** There are three types of radioactive emissions: **Alpha, Beta and Gamma.**

○ Alpha particles are positively charged **He (Helium) atoms,** beta particles are negatively charged electrons and gamma rays are neutral electromagnetic radiations.

➢ Radioactive elements are **naturally found in the earth's crust. Uranium, thorium and actinium** are three NORM (Naturally Occurring Radioactive Materials) series that contaminate water resources.

➢ Radioactivity is measured in **Becquerel (SI unit) or in Curie.** The unit **Sievert measures the quantity of radiation absorbed by human tissues.**

International Atomic Energy Agency

➢ **About:**

○ Widely known as the world's **"Atoms for Peace and Development"** organisation within the **United Nations family, t**he IAEA is the international centre for **cooperation in the nuclear field.**

➢ **Establishment:**

○ The IAEA was created in 1957 in response to the deep fears and expectations generated by th**e discoveries and diverse uses of nuclear technology.**

○ Headquarter: **Vienna, Austria.**

➢ **Objective:**

○ The Agency works with its Member States and multiple partners worldwide to promote safe, secure and peaceful use of nuclear technologies.

○ In 2005, it was awarded the **Nobel Peace Prize** for their work for a safe and peaceful world.

Note:

➢ **Functions:**
  ❍ It is an independent international organisation that reports annually to the **United Nation General Assembly.**
  ❍ When necessary, the IAEA also reports to the **UN Security Council** in regards to instances of members' non-compliance with safeguards and security obligations.

Great Nicobar Island Project

Why in News?

The **National Green Tribunal (NGT)** has issued a stay on the **Great Nicobar Island** project worth ₹**72,000 crore** and created a committee to review the environmental clearance granted by the **Ministry of Environment, Forest and Climate Change.**

What is the Great Nicobar Island Project?

➢ **About:**
  ❍ The **Great Nicobar Island (GNI)** Project is a mega project to be implemented at the southern end of the **Andaman and Nicobar islands.**
  ❍ The project includes an **international container transshipment terminal, a greenfield international airport, township development,** and a **450 MVA gas and solar based power plant** over an extent of 16,610 hectares in the island.

➢ **Purpose:**
  ❍ **Economic Reasons:**
    ● As per the **NITI Aayog** report, the proposed port will allow Great Nicobar to **participate in the regional and global maritime economy** by becoming a major player in cargo transshipment.
      ■ It is **equidistant from Colombo to the southwest and Port Klang (Malaysia) and Singapore to the southeast,** and **positioned close to the East-West international shipping corridor,** through which a very large part of the world's shipping trade passes.

➢ **Strategic Reasons:**
  ❍ The proposal to develop Great Nicobar was first floated in the **1970s,** and its importance for national security and consolidation of the **Indian Ocean Region** has been repeatedly underlined.

  ❍ Increasing **Chinese assertion in the Indian Ocean** has added **great urgency to this imperative in recent years.**

➢ **Criticism:**
  ❍ **Impact on Biodiversity:**
    ● The project has faced several criticism citing concerns regarding its adverse impact on the **rich biodiversity of the area** and damage to the habitats of endangered species.
      ■ The project area is part of **Coastal Regulation Zones-IA and IB,** and Galathea bay which is a nesting ground for birds.
      ■ Also, **turtle nesting sites, dolphins and other species** will be harmed by **dredging.**

➢ **Impact on Tree Cover and Mangroves:**
  ❍ **Environmentalists** have also flagged the **loss of tree cover and mangroves** on the island as a result of the development project.
  ❍ The **loss of tree cover will not only affect the flora and fauna on the island,** it will also lead to **increased runoff and sediment deposits** in the ocean, impacting the coral reefs in the area.

➢ **Lack of Adequate Assessment:**
  ❍ Critics claimed that **only one season data has been taken,** as opposed to the **requirement of taking data for three seasons for comprehensive impact assessment, environmental impact assessment reports** were not conducted as per **Terms of Reference (ToR).**

➢ **Encroachment in Tribal Space:**
  ❍ Critics argue that while **Particularly Vulnerable Tribal Groups (PVTGs)** are accorded the highest level of protection by local administration, **they still face numerous challenges due to encroachment into their areas in the name of development.**

Great Nicobar
➢ **About:**
  ❍ Great Nicobar is the **southernmost island of the Nicobar Islands Archipelago.**
    ● It covers 1,03,870 hectares of unique and threatened tropical **evergreen forest ecosystems.**
  ❍ It is home to a **very rich ecosystem, including 650 species of angiosperms,** ferns, gymnosperms, bryophytes, among others.

Note:

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- In terms of fauna, there are over **1800 species,** some of which are **endemic to this area.**
- ➢ **Ecological Characteristics:**
  - ○ The **Great Nicobar Biosphere Reserve** harbours a wide spectrum of ecosystems comprising **tropical wet evergreen forests, mountain ranges** reaching a height of 642 m (Mt. Thullier) above sea level, and coastal plains.
- ➢ **Tribe:**
  - ○ The **Mongoloid Shompen Tribe**, about 200 in number, live in the forests of the biosphere reserve particularly along the rivers and streams.
    - They are **hunters and food gatherers**, dependent on forest and marine resources for sustenance.
  - ○ Another Mongoloid Tribe, **Nicobarese**, about 300 in number, used to live in settlements along the west coast.
    - After the tsunami in 2004, which devastated their settlement on the western coast**, they were relocated to Afra Bay in the North Coast and Campbell Bay.**
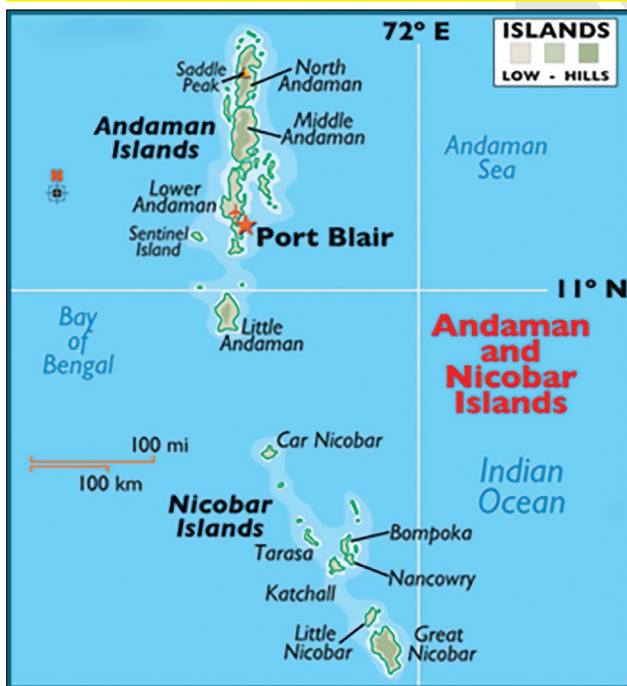
Conclusion

The NGT's order to stay the Great Nicobar Island project and constitute a committee to review the environmental clearance aims to ensure that the project is **compliant with the Island Coastal Regulation Zone 2019** and **tribal rights**.

Megafauna Bias Hampers Carnivore Conservation Efforts

Why In News?

India's **carnivore research is focusing too much on larger and more popular species,** leading to a lack of understanding of smaller and less well-known carnivores. This gap in knowledge is hindering conservation efforts in the country.

Why are Carnivores Important for Conservation?

- ➢ **Carnivores dominate the food web, playing a crucial role in maintaining ecological balance.** Despite their importance, **carnivores are among the most threatened mammals in the world.**
- ➢ Hence, substantial research and conservation resources are invested in studying, protecting, and managing carnivore populations, globally.

What is India's Carnivore Conservation Status?

- ➢ **India is home to 23% of the world's carnivore population, belonging to 60 species.**
- ➢ However, a review of studies published since 1947 shows that the impact of the 70 years of research on charismatic species on their conservation status and policies in the country has been far from satisfactory.
- ➢ **The wild cat family, particularly the tiger, dominates carnivore literature** in the country. Other top carnivores that have received a substantial research focus include the Indian leopard, golden jackal, **dhole**, and jungle cat.
  - ○ However, **the quality of studies on smaller and less charismatic carnivores has generally been poor.**

What is the Impact of Research on Carnivores in India?

- ➢ Scientific research on **tigers has led to the establishment of Project Tiger in 1973** and **helped in the establishment of tiger reserves in 50 locations across the country.**
- ➢ Research has provided **evidence against the construction or expansion of highways through tiger**

Note:

habitats in litigation, such as through **Bandipur Tiger Reserve**, **Kanha-Pench tiger corridor**, and **Bhagwan Mahavir Wildlife Sanctuary.**

○ Research data has contested the ambitious **Ken-Betwa river interlinking project,** which is likely to submerge a major portion of the core area of the **Panna Tiger Reserve in Madhya Pradesh**.

➤ **Research on the Indian leopard has resulted in the formulation of national guidelines on human-leopard conflict mitigation.**

➤ It is found that the wild cat family, particularly the tiger, dominates carnivore literature in the country. **The Indian leopard, golden jackal, dhole, and jungle cat** are the other top carnivores that have received a substantial research focus.

➤ But the quality of studies on smaller and less charismatic carnivores has generally been poor.

Why is Research on Smaller and Less Charismatic Carnivores Important?

➤ Research on smaller and less charismatic carnivores is **important as it helps in understanding the important link between carnivores and their ecological communities** and ecosystems, which has implications for human sustenance.

➤ Small cat carnivores execute important ecological **functions like controlling rodent populations, known to be agricultural pests and disease carriers**, dispersing seeds, and maintaining forest ecosystems.

○ Civets are known to disperse seeds and help in maintaining forest ecosystems.

> *Note:*
>
> ➤ **Charismatic megafauna** is a term used to **describe large, iconic animal species that are popularly perceived as being charismatic or appealing**, such as elephants, tigers, lions, pandas, and polar bears. These animals often receive a lot of attention and conservation efforts due to their cultural and aesthetic significance.

What are the Challenges in Carnivore Research and Conservation in India?

➤ **Wetland conservation remains under-prioritized,** and grassland ecosystems, which give refuge to critically threatened species like the **caracal,** are also sidelined in research and conservation.

➤ There is a decline in **natural history studies, the basic steppingstone to understanding species ecology, expedited by a parallel reduction in journals that publish such studies**.

➤ Policies are often driven by **political influences and misplaced priorities, and scientific recommendations are disregarded.**

➤ Limited interdisciplinary studies in carnivore literature hinder the development of socio-ecologically sensitive policies.

➤ Bureaucratic hurdles need to be eliminated to benefit non-government agencies and independent researchers.

What Steps can be Taken to Improve Carnivore Conservation in India?

➤ I**ncreased funding for research on smaller and less charismatic carnivores** to raise their profile and focus attention on their vulnerable and threatened habitats in India's conservation policies.

➤ **Interdisciplinary research with a collaborative and constructive approach** by roping in communities to encourage socio-ecologically sensitive policies.

➤ Frameworks like biodiversity heritage sites under the Indian **Biological Diversity Act (2002)** or community reserves under the Indian **Wildlife Protection Act (1972)** facilitate the maintenance of socio-ecological systems by fostering local stewardship and ultimately democratising carnivore research.

Challenges and Solutions for Managing Solar PV Waste in India

Why in News?

Despite the efforts of Indian policymakers to transition to a **circular economy**, there is currently a lack of clear directives for waste management in the solar photovoltaic (PV) industry.

What is PV Waste?

➤ **About:**

○ **Photo-Voltaic waste** is the electronic waste generated by discarded solar panels. PV waste may contain hazardous materials, including heavy

metals **such as cadmium, copper, lead, antimony, and selenium.**

○ PV waste are sold as scraps in India. It can increase by at least four-five-fold by the next decade. India should focus its attention on drafting comprehensive rules to deal with solar waste.

➤ **Composition of Solar PV:**

○ India's solar PV installations are dominated by **crystalline silicon (c-Si) technology. A typical PV panel is made of c-Si modules (93%) and cadmium telluride thin-film modules (7%).**

● A **c-Si module mainly consists of a glass sheet, an aluminum frame, an encapsulant, a back sheet, copper wires, and silicon wafers.** Silver, tin, and lead are used to make c-Si modules. The thin-film module is made of glass, encapsulant, and compound **semiconductors.**

➤ **Status of India in PV Waste:**

○ Globally, India has the **world's fourth-highest solar PV deployment.** The installed solar capacity was nearly 62GW in November 2022. This leads to a huge amount of solar PV waste.

○ According to a 2016 report by the **International Renewable Energy Agency,** India could generate **50,000-3,25,000 Tonnes of PV waste by 2030 and more than four million Tonnes by 2050.**

Can this Waste be Recovered or Recycled?

➤ As **PV panels near expiration, some portions of the frame are extracted** and sold as scrap, and junctions and cables are recycled according to e-waste guidelines.

➤ The glass laminate is partly recycled, while silicon and silver can be extracted by burning the module in cement furnaces. However, **approximately 50% of the total materials can be recovered,** and only about 20% of the waste is recovered in general, with the rest being treated informally.

➤ This growing informal handling of PV waste has led to **waste accumulation at landfills, polluting the surroundings.** Incinerating the encapsulant also releases sulphur dioxide, hydrogen fluoride, and hydrogen cyanide into the atmosphere.

What are the Challenges in Managing PV Waste in India?

➤ **Informal Handling of PV Waste:**

○ Despite some portions of the PV panels being extracted and recycled, a significant portion of the waste is treated informally, leading to the accumulation of waste in landfills and polluting the surroundings.

➤ **Limited Market for Reusing Recycled PV Waste:**

○ The market to reuse recycled PV waste is currently extremely small in India due to a lack of suitable incentives and schemes in which businesses can invest.

● The lack of central insurance or regulatory body to protect against financial losses incurred in waste collection and treatment.

➤ **Lack of Specific Guidelines for PV Waste Treatment:**

○ Simply clubbing PV waste with other e-waste could lead to confusion, and there is a need for specific provisions to be formulated and implemented within the ambit of the e-waste guidelines.

● Need for specific provisions for PV waste treatment within e-waste guidelines to avoid confusion.

➤ **Hazardous Waste Classification:**

○ The waste generated from PV modules and their components is classified as 'hazardous waste' in India.

● Conducting awareness campaigns and sensitization programs about managing PV waste can help people understand the importance of properly handling hazardous waste. This will encourage more people to participate in proper waste management and disposal practices.

➤ **Limited Local Solar PV-panel Manufacturing:**

○ India **needs to pay more attention to domestic R&D efforts** as depending on a single module type will dis-uniformly deplete certain natural resources and stunt the local capacity for recycling and recovery of critical materials. The domestic development of PV waste recycling technologies must be promoted through appropriate infrastructure facilities and adequate funding.

What are India's Initiatives?

➤ **Draft EPR Notification: Plastic Packaging Waste.**

➤ **Plastic Waste Management Amendment Rules, 2021.**

➤ **E-Waste (Management) Rules, 2016.**

➤ **E-waste (Management) Amendment Rules, 2018.**

➤ **Central Pollution Control Board.**

Note:

What are the Initiatives of the other Countries?

➢ **European Union:**

   ○ The **Waste Electrical and Electronic Equipment (WEEE)** Directive of the **EU (European Union)** imposes responsibility for the **disposal of waste on the manufacturers or distributors** who introduce or install such equipment for the first time.

      ● PV **manufacturers are solely responsible for the collection, handling, and treatment of modules** at the end of their lifecycle, according to the WEEE Directive.

➢ **UK:**

   ○ The UK also has an **industry-managed "take-back and recycling scheme",** where all PV producers will **need to register and submit data related to products** used for the residential solar market (Business-to-Consumer) and non-residential market.

➢ **USA:**

   ○ While there are no federal statutes or regulations in the US that talk about recycling, **there are some states who have proactively defined policies to address end-of-life PV module** management.

   ○ Washington and California have come up with **Extended Producer Responsibility (EPR) regulations.** Washington now requires **PV module manufacturers to finance the take-back and reuse or recycling of PV modules** sold within or into the state at no cost to the end user.

➢ **Australia:**

   ○ The federal government in Australia has acknowledged the concern and announced a USD 2 million grant as **part of the National Product Stewardship Investment Fund** to develop and implement an industry-led product stewardship scheme for PV systems.

➢ **Japan and South Korea:**

   ○ Countries such as Japan and South Korea have already indicated their resolve to come up with **dedicated legislation to address the PV waste problem.**

Why should India Act now?

➢ India is expected to generate a vast amount of PV waste over the next 20 years, making it one of the **top five leading photovoltaic waste producers worldwide by 2050.**

   ○ Therefore, India needs to install clear policy directives, well-established recycling strategies, and greater collaboration to prepare for this new challenge. By addressing the gaps in PV waste management, India can achieve its goal of a circular economy and effective waste management while promoting sustainable development.

Impacts of Hydropower Projects in the Himalayan Region

Why in News?

Disasters linked to **hydropower projects in the Himalayan** region have become more frequent in recent years.

What is the Potential of Hydropower Projects in Himalayan Region?

➢ With its abundant waterbodies and ideal topography to utilize the resource for electricity generation, the Himalayan region is regarded as the powerhouse of India.

➢ Government estimates suggest that the region has the potential **to generate 115,550 MW** with its **installed capacity of 46,850 MW**.

➢ Till November 2022, the **10 states** and **two Union territories** in the region had **81 large hydropower projects** (above 25 MW) and 26 projects under construction.

➢ Another **320 large projects are in the pipeline**, according to the **Central Electricity Authority** under the Union Ministry of Power.

What are the Risks and Impacts of Hydropower Projects in the Himalayan Region?

➢ **Vulnerability:**

   ○ The Himalayas are part of a **seismically active zone**.

   ○ Despite the climate and seismic activities in the Himalayas making its river valleys **prone to landslides**, hydropower projects are mushrooming in the region. In **Uttarakhand's Joshimath town**, where more than 800 buildings have developed cracks **due to subsidence**, the government on

January 5, 2023, imposed a ban on construction activities, including on the works at Tapovan Vishnugad hydropower project.

➤ **Impact:**

○ Hydropower projects in the region have become more frequent in recent years, and disasters linked to these projects have increased.

○ **In 2012,** flooding in the Assi Ganga river **damaged** the A**ssi Ganga hydroelectric projects (HEP)** 1 and 2.

○ The **2013 Kedarnath floods** severely **damaged Phata-Byung**, Singoli-Bhatwari, and **Vishnuprayag** HEPs.

○ **In 2021**, a rock and ice **avalanche destroyed the Rishi Ganga project** and damaged the Vishnugad-Tapovan HEP, leaving **over 200 dead** and estimated losses of Rs 1500 crore.

○ **Vishnugad-Tapovan** had already suffered recurring damages due to terrain fragility, according to various media reports.

○ **In December, 2022,** a significant slope failure occurred at the **Urni landslide** zone in Kinnaur district of **Himachal Pradesh,** where construction works have been going on at the 1,091 MW **Karcham Wangtoo hydroelectric plant.**

○ These landslide dams usually result in impounding of lakes, landslide lake outburst flood, secondary landslides, channel avulsion, and formation of flood terraces in the downstream region, affecting the environment and local communities.
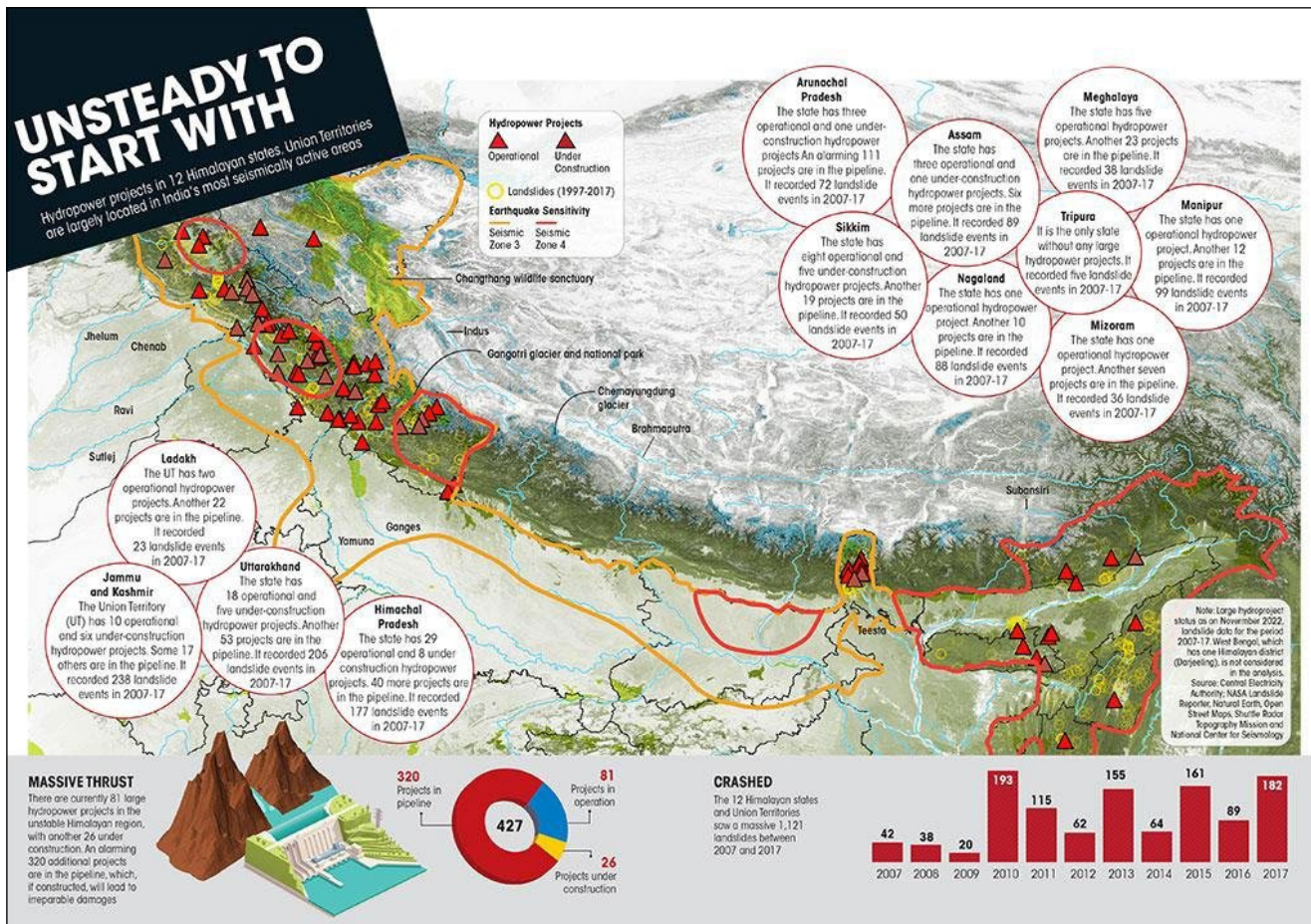
What are the Government Initiative Taken So Far?

➤ **National Mission on Sustaining Himalayan Ecosystem (NMSHE)** is one of the eight missions under the **National Action Plan on Climate Change (NAPCC)**. The mandate is to evolve measures to sustain and safeguard the Himalayan glaciers, mountain ecosystems, biodiversity and wildlife conservation & protection.

➤ **Environment Impact Assessment** for large hydro power plants.

Note:

What Steps can be taken to Reduce the Impact?

➢ The risks posed by landslides in the Himalayas have been aggravated in recent years, making hydropower projects more dangerous and unsustainable.

➢ There is a dire n**eed to re-evaluate these project**s based on current scientific data.

➢ Most of the existing or under-construction projects in the Himalayas were envisaged 10-15 years ago, and the **government should look at new science and then decide.**

➢ Even if the government decides in favor of the project, **let the local panchayat give it in writin**g that they are in favor of the project.

➢ Constitution of expert committee to study impact of HEP in Himalayan region. For e.g., Ravi Chopra committee set up by the ministry to examine the role of 24 such hydropower projects in the Alaknanda and Bhagirathi basin.

Salt Marshes Succumb to Sea Level Rise

Why in News?

For the past 50 years, researchers from the **Marine Biological Laboratory (MBL)** have monitored the vegetative cover of the **Great Sippewissett Marsh in Falmouth, Massachusetts,** to examine the effects of increased nitrogen levels on the marsh grass species there.

➢ But a recent study suggests that by the turn of the century, **more than 90% of these biologically productive ecosystems could be lost to sea level rise.**

What are Salt Marshes?

➢ **About:**
  ○ Salt marshes are **coastal wetlands that are regularly flooded and drained by tides.** They are unique ecosystems that are **situated between land and sea,** and they consist of a **mixture of grasses, sedges, rushes, and other plants** that can **tolerate high levels of salt.**

➢ **Characteristics:**
  ○ Salt marshes are marshy because the soil may be composed of deep mud and peat. Peat is made of decomposing plant matter that is often several feet thick.

  ○ Salt marshes smell like **sulfurous rotten-egg smell.** Because salt marshes are frequently submerged by **tides and contain a lot of decomposing plant material**, **oxygen levels in the peat can be extremely low**—a condition called **hypoxia.**
    ● Hypoxia is caused by the growth of bacteria which produce the sulfurous rotten-egg smell that is often associated with marshes and mud flats.

What are the Advantages of Salt Marshes?

➢ Salt marshes have long been considered **one of the most productive and biologically diverse ecosystems on the planet**. They serve as a vital habitat for numerous species of fish, birds, and other wildlife.

➢ Salt marshes are the **"ecological guardians of the coast"** that maintain healthy fisheries, coastlines and communities.
  ○ They provide shelter, food and nursery grounds for more than **75% of coastal fisheries species including shrimp, crab and many finfish.**

➢ Salt marshes also **protect shorelines from erosion** by creating a buffer against wave action and by trapping soils.

➢ Salt marshes **reduce the flow of flood water and absorb rainwater.** By filtering runoff and excess nutrients, salt marshes also help to maintain water quality in coastal bays, sounds and estuaries.

➢ Salt marshes are also important **carbon sinks**, meaning they absorb and store large amounts of carbon dioxide from the atmosphere. This helps to mitigate the impacts of climate change by reducing the amount of greenhouse gases in the atmosphere.

What are the Threats to Salt Marshes?

➢ Despite their numerous advantages, **salt marshes are facing a number of threats that could put their survival at risk**. One of the most significant of these threats is sea level rise.

Note:

- ❍ **As sea levels continue to rise** due to climate change, **salt marshes are at risk of being submerged and disappearing entirely**.
- ➢ Another threat to salt marshes is the **introduction of excess nitrogen, which can alter the balance of plant species** and lead to a loss of biodiversity. This excess nitrogen can come from a variety of sources, including fertilizer runoff from agricultural fields and urban areas.
- ➢ Anthropogenic activities, such as the **construction of seawalls and other structures along the coast, can also prevent salt marshes from migrating landward** in response to rising sea levels.
  - ❍ This can lead to a phenomenon known as **"coastal squeeze,"** where the marshes are squeezed between rising seas and man-made barriers.

Conference on Human-Wildlife Conflict

Why in News?

Recently, the **International Conference on Human-Wildlife Conflict and Coexistence** was held in Oxford, the United Kingdom, which has brought hundreds of activists from 70 countries to discuss solutions to address **Human-Wildlife Conflicts.**

- ➢ The Conference was organized by the **International Union for Conservation of Nature (IUCN)**, the **Food and Agriculture Organization (FAO)**, the **UN Development Programme** and several other organizations together.

What does the Conference Aim at Achieving?

- ➢ Facilitate dialogue and peer-to-peer **learning across sectors and actors on the topic** for partnerships and collaboration across people and institutions working on human-wildlife conflict.
- ➢ Generate **interdisciplinary and shared understanding** of the latest insights, technologies, methods, ideas, and information from the field of human-wildlife conflict, coexistence and interactions.
- ➢ Mainstream **human-wildlife conflict as one of the top global priorities** in biodiversity conservation and the **Sustainable Development Goals** for the next decade, catalysing opportunities for working together on national, regional or global policies and initiatives.

- ➢ **Identify and develop a collective way forward** for addressing knowledge and implementation gaps for effective efforts to reduce and manage human-wildlife conflict.

What is the Need for this Conference?

- ➢ Human-wildlife conflicts across the world are a major challenge to conservation of species, making coexistence with nature difficult and hinders biodiversity protection.
  - ❍ Conflict-related killing affects **more than 75% of the world's wild cat species,** according to the **United Nations Environment programme (UNEP).**
- ➢ It will provide a platform for experts from the fields of "ecology, animal behaviour, psychology, law, conflict analysis, mediation, peacebuilding, international development, economics, anthropology and others, to understand **human-wildlife conflict through various viewpoints, learn from each other**, and build new links and collaborations.
- ➢ Effective management of human-wildlife interactions is prescribed in **Target 4 of the Kunming-Montreal Global Biodiversity Framework** agreed at the UN Biodiversity Conference in December 2022.

What is Human-Animal Conflict?

- ➢ **About:**
  - ❍ Human-animal conflict **refers to situations where human activities**, such as agriculture, infrastructure development, or resource extraction, **come into conflict with wild animals**, leading to n**egative outcomes for both humans and animals.**
- ➢ **Implications:**
  - ❍ **Economic Losses:** Human-animal conflict can result in **significant economic losses for people, especially farmers** and livestock herders. Wild animals can destroy crops, damage infrastructure, and kill livestock, leading to financial hardship.
  - ❍ **Threats to Human Safety:** Wild animals can pose a t**hreat to human safety, especially in areas where people and wildlife coexis**t. Attacks by large predators such as lions, tigers, and bears can result in serious injury or death.
  - ❍ **Ecological Damage:** Human-animal conflict can have a **negative impact on the environment**. For example, when humans kill predators, it can lead to **an increase in prey populations**, which can then cause ecological imbalances.

Note:

drishti

○ **Conservation Challenges:** Human-animal conflict can also p**ose a challenge to conservation efforts,** as it can lead to negative perceptions of wildlife and make it difficult to implement conservation measures.

○ **Psychological Impacts:** Human-animal conflict can also have psychological impacts on people, especially those wh**o have experienced attacks or property damage**. It can lead to fear, anxiety, and trauma.

➢ **Government Measures:**

○ **The Wildlife Protection Act, 1972:** This act provides the legal framework for the activities, Prohibition of hunting, Protection and management of wildlife habitats, Establishment of protected areas etc.

○ **The Biological Diversity Act, 2002:** India is a part of the **United Nations Convention on Biological Diversity.** The provisions of the Biological Diversity Act are in addition to and not in derogation of the provisions in any other law relating to forests or wildlife.

○ **National Wildlife Action Plan (2002-2016):** It focuses on strengthening and **enhancing the protected area network,** on the conservation of Endangered wildlife and their habitats, on controlling trade in wildlife products and on research, education, and training.

○ **Project Tiger:** Project Tiger is a **Centrally Sponsored Scheme** of the Ministry of Environment, Forests and Climate Change (MoEFCC) launched in 1973. It provides **havens for tigers in the country's national parks.**

○ **Project Elephant:** It is a centrally sponsored scheme and was launched in February 1992 for the protection of elephants, their habitats and corridors.

Rapidly Melting Antarctic Ice

Why in News?

A study published in *Nature* has revealed that **rapidly melting Antarctic ice** is dramatically **slowing down the flow of water through the world's oceans**, and could have a **disastrous impact on global climate**, **marine food chain** and on the **stability of ice shelves**.

What are the Key Highlights of the Report?

➢ **Impact on World's Ocean:**

○ As temperatures rise and freshwater from Antarctica's melting ice enters the ocean, the salinity and density of the surface water are reduced, **diminishing the downward flow to the sea's bottom.**

○ The study showed that **warm water intrusions in the western Antarctic ice shelf would increase**, but it did not look at how this might create a feedback effect and generate even more melting.

○ The report found **deepwater circulation in the Antarctic could weaken at twice the rate of decline in the North Atlantic.**

○ **Also, deep ocean water flows from Antarctica could decline by 40% by 2050.**

➢ **Impact on Global Climate**:

○ The findings also suggest the ocean would not be able to absorb as much carbon dioxide as its upper layers become more stratified, leaving more CO_2 in the atmosphere.

➢ **Impact on Food Chain:**

○ **Ocean overturning** allows nutrients to rise up from the bottom, with the Southern Ocean supporting about **three-quarters of global phytoplankton production**, the base of the food chain.

○ Slowing the sinking near Antarctica **slows down the whole circulation** and hence also **reduces the amount of nutrients that get returned from the deep ocean** back up to the surface.

What are India's Initiatives in Antarctica's Context?

➢ **Antarctic Treaty: India officially acceded to the Antarctic Treaty System** on **1st August 1983**. On 12 September 1983, India became the fifteenth Consultative Member of the Antarctic Treaty.

➢ **Research Stations: The Dakshin Gangotri station (decommissioned) and the Maitri station, Bharti** were established to carry out research in Antarctica.

➢ **Establishment of NCAOR:** The **National Centre for Antarctic and Ocean Research (NCAOR)** was established to counduct the country's research activities in the Polar and Southern Ocean realms.

Note:

> ➤ **Indian Antarctic Act 2022:** It envisages regulating visits and activities to Antarctica as well potential disputes that may arise among those present on the continent.
> ➤ Other provisions of the act involve **protecting mineral resources, protecting native plants**, **prohibition on introducing birds not native** to Antarctica and **provisions for Indian tour operators.**

What about Deglaciation in the Rest of the World?

➤ **Melting of Thwaites Glacier:** Thwaites Glacier is 120 km wide, **fast-moving glacier located in Antarctica.**
  - ❍ Because of its size (1.9 lakh square km), **it contains enough water to raise the world sea level by more than half a metre**.
  - ❍ Its melting already contributes 4% to global sea-level rise each year.

➤ **Ice Melting at Mt. Kilimanjaro:** The ice cap on Africa's biggest peak, Tanzania's Mount Kilimanjaro, is **among the famous glaciers predicted to melt by 2050 because of climate change.**
  - ❍ It has **melted more than 80% since 1912.**

➤ **Retreating Himalayas:** The Himalayan glaciers form the largest body of ice outside the polar caps and are the source of water for the innumerable rivers that flow across the Indo-Gangetic plains.
  - ❍ Glaciers in the Himalaya are **receding faster than in any other part of the world.**
  - ❍ The glaciers have been **losing the equivalent of more than a vertical foot and half of ice each year since 2000**; double the amount of melting that took place from 1975 to 2000.

Note:

Security

Medical Device and Malware

Why in the News?

Recently, some experts have warned that Common medical devices such as oximeters, hearing aids, glucometers, and pacemakers can be turned into **Ransomware.**

➤ Industry experts are now seeking urgent Central government intervention to recognize this threat and immediately put in place measures to plug any possible drain.

➤ The warning comes close on the heels of **the ransomware attacks suffered by India's top tertiary care hospitals**, leading to the siege of millions of medical records and vast amounts of health data at Delhi's AIIMS, Safdarjung Hospital etc.

What are the Concerns?

➤ **Data Breaches:**
  ○ The increasing use of medical technology devices and the lack of adequate cyber protection for these devices have **raised concerns about data breaches and cyberattacks in the healthcare** industry.
  ○ Such devices contain software as medical devices (SaMD) and software in medical devices (SiMD), and are typically connected to the internet, mobile phones, servers, and the cloud and thus vulnerable to attacks.
  ○ **Sun Pharma**, the fourth-largest generic pharmaceutical company in the world and an Indian multinational corporation, **was targeted in the recent cyberattacks** along with the **Indian Council of Medical Research (ICMR).**

➤ **Vulnerable Population:**
  ○ India is among **the world's top 20 markets for medical devices**, with the medical devices sector projected to reach USD 50 billion by 2025. However, the rapid economic growth, rising middle-class incomes, and increased market penetration of medical devices have left the **population vulnerable to cyber threats.**

➤ **Inadequate Systems:**
  ○ Furthermore, the **Indian healthcare industry lacks a centralized data collection mechanism,** which makes it challenging to determine the exact cost of data corruption.
  ○ Despite this, it is evident that data has become the **new oil and is seeing a significant threat from cyberattacks.**

How can we Address Such Cyber Threats?

➤ **Consultation with the Experts:** The government should consult with industry experts to identify the challenges that could pose a risk to national security.

➤ **Employee Training:** Employees should be trained in how to recognize and avoid phishing emails, which are commonly used to initiate ransomware attacks.

➤ Data protection is not a rocketing science, but requires legal and technical artisanship, the **allocation of adequate resources and the training of all professionals** involved in the processing of personal data.

➤ **Regular Software Updates:** Regular software updates can help address vulnerabilities that hackers might exploit.

➤ **Access Control:** Limiting access to medical devices to only authorized personnel can prevent unauthorized individuals from accessing the devices and infecting them with malware.

➤ **Encryption:** Encryption can be used to protect the data on medical devices from unauthorized access.

Note:

What are the Major Types of Cyber Threats?

➢ **Ransomware:** This type of malware **hijacks computer data and then demands payment (usually in bitcoins)** in order to restore it.

➢ **Trojan Horses:** A Trojan horse attack uses a malicious program that is hidden inside a seemingly legitimate one.
  ○ When the user executes the **presumably innocent program,** the malware inside the Trojan can be used to open a backdoor into the system through which hackers can penetrate the computer or network.

➢ **Clickjacking:** Act of tempting internet users to click links **containing malicious software or unknowingly share private information** on social media sites.

➢ Denial of Service (DOS) Attack: The deliberate act of overloading a particular service like website from multiple computers and routes with the aim of disrupting that service.

➢ **Man in Middle Attack:** In this kind of attack, the messages between two parties are intercepted during transit.

➢ **Crypto Jacking:** The term Crypto jacking is closely **related to cryptocurrency**. Crypto jacking takes place when attackers access someone else's computer for mining cryptocurrency.

➢ **Zero Day Vulnerability:** A zero-day vulnerability is a flaw in the machine/network's operating system or application software which has not been fixed by the developer and can be exploited by a hacker who is aware of it.

➢ **Bluebugging:** It is a form of Bluetooth hacking in which an **attacker exploits a vulnerability in a Bluetooth-enabled** device to gain unauthorized access to it. The attacker can then use the compromised device to make calls, **send messages, or access other data without the user's knowledge or consent.**

What are the Government Initiatives Related to Cyber Security?

➢ **Indian Cyber Crime Coordination Centre (I4C)**

➢ **Indian Computer Emergency Response Team (CERT-In)**

➢ **Cyber Surakshit Bharat**

➢ **Cyber Swachhta Kendra**

➢ **National Cyber security Coordination Centre (NCCC)**

➢ **Network Segmentation:** Segmenting the network can help **prevent the spread of malware from one device to another.**

UAPA Tribunal Upholds Centre's Decision to Ban PFI

Why in News?

Recently, five months after its constitution, the **Unlawful Activities (Prevention) Tribunal upheld the Centre's decision to ban Popular fronts of India** and its affiliates.

What is the Background of the Issue?

➢ In September 2022, the Ministry of Home Affairs (MHA) in a gazette notification declared the PFI an "unlawful association" along with "its associates or affiliates or fronts.

➢ The notification issued by the MHA imposed a ban on the PFI and its associate organizations, including the Rehab India Foundation (RIF) and Campus Front of India, for five years under the **Unlawful Activities (Prevention) Act (UAPA), 1967.**

What is UAPA?

➢ **About:**
  ○ The UAPA is **aimed at prevention of unlawful activities association in India.** Its main objective is dealing with activities directed against the integrity and sovereignty of India. It is **also known as Anti-terror law**.
  ○ Unlawful activities refer to any action taken by an individual or association intended to disrupt the territorial integrity and territorial sovereignty in India.
  ○ The **act assigns absolute power to the central government** and provides for **death penalty and life imprisonment as the highest punishments.**

Note:

- ➢ **Major Provisions of the UAPA:**
  - ❍ UAPA provides special procedures to deal with terrorist activities, among other things; the **central government may designate an individual/ organization as a terrorist/terrorist organization if it:**
    - ● Commits/participates in acts of terrorism,
    - ● Prepares for terrorism,
    - ● Promotes terrorism, or
    - ● Is otherwise involved in terrorism.
  - ❍ Under the Act, **an investigating officer is required to obtain the prior approval of the Director General of Police to seize properties** that may be connected with terrorism.
  - ❍ **Additionally**, if the investigation is conducted by **an officer of** the **National Investigation Agency (NIA)**, the **approval of the Director General of NIA** would be **required for seizure of such property**.
  - ❍ It **empowers the officers of the NIA, of the rank of Inspector or above, to investigate** cases in addition to those conducted by officers of the rank of Deputy Superintendent or Assistant Commissioner of Police or above
- ➢ **Procedure Followed:**
  - ❍ The **declaration of an association as unlawful is communicated through a gazette notification** and by affixing a copy on the association's offices or through loudspeakers in the area where the association conducts its activities.
  - ❍ The notification **remains valid for five years** from the date of publication, subject to the tribunal's order under the UAPA.
  - ❍ **When the Centre declares an organization as unlawful, a tribunal is established by the Center** to further investigate and confirm whether the decision is justified.
  - ❍ The **notification by the Centre does not take effect until the tribunal confirms** the declaration and the order is published in the official gazette.
  - ❍ The government must send the notification to the tribunal within 30 days of issuing the gazette notification to have the ban ratified.
  - ❍ Additionally, the MHA must refer to the Tribunal along with the cases that the NIA, **Enforcement Directorate**, and state police forces have registered against the association and its members across the country.

What is the UAPA Tribunal?

- ➢ The UAPA provides for a tribunal to be constituted by the government for its bans to have long-term legal sanctity.
  - ❍ It is headed by a retired or sitting judge of a High Court.
- ➢ On receiving notification from the Centre, the Tribunal calls upon the concerned association to **show cause, within 30 days from the date of the service of such Centre's notice, that why it should not be declared unlawful.**
- ➢ After hearing arguments from both sides, the Tribunal can hold an inquiry to **decide within 6 months** whether there is sufficient evidence to declare an association unlawful association.
- ➢ Under the UAPA, the **Centre's notification cannot have an effect until the tribunal confirms the declaration** in its order.

What are the Criticisms of the UAPA?

- ➢ **Lack Of Substantive and Procedural Process:** Section 35 of UAPA allows government to list **any individual as a terrorist**. The government may do so, based on only major suspicion and without any process.
  - ❍ The vague powers of State to detain and arrest individuals who it believes to be indulged in terrorist activities **gives itself more powers vis-a-vis individual liberty** guaranteed under **Article 21 of the Constitution**.
- ➢ **Indirect Restriction on Right to Dissent:** The **right to dissent** is a part and parcel of the **fundamental right to free speech and expression** and therefore, cannot be abridged in any circumstances except for mentioned in Article 19 (2).
  - ❍ The **Amendment to UAPA in 2019** empowered the ruling government, under the garb of curbing terrorism, to impose indirect restriction on the right to dissent which is **detrimental for a developing democratic society.**
- ➢ **Time Consuming:** In **almost 43% of the cases**, the charge sheet has taken more than a year or two to be filed. This has led to **a delay in getting justice**.

Note:

Art and Culture

Highlights

- *Vaikom Satyagraha*
- *Reincarnation in Tibetan Buddhism*
- *Pattanam Site*
- *Vaikom Satyagraha*

VARDHAMAN MAHAVIRA

The 24th and last Tirthankara; succeeded the 23rd Tirthankara, Parshvanatha (Mahavira was not the founder of Jainism)

BIRTH

- To King Siddhartha of Kundalgram and Queen Trishala, a Lichchhavi princess
- In 6th century BC, Vajji kingdom (modern day Vaishali, Bihar)
- Belonged to Ikshvaku dynasty

Mahavir Jayanti, one of the most auspicious festivals for Jains, marks the birth of Vardhamana Mahavira

SPIRITUAL LIFE

- Abandoned worldly life at age 30
- Attained 'kaivalya' (omniscience) at age 42
- Delivered his first sermon at Pava (near Patna)

A symbol is associated with every Tirthankara, Mahavira's symbol was a lion

DEATH

- Believed to be passed away and attained Moksha at age 72 (5th century BC)
- Died at Pavapuri (near modern-day Rajgir, Bihar)

Moksha - liberation from the cycle of birth and death

TITLES

- Mahavira (great hero)
- Jaina/Jitendriya (who conquered all his senses)
- Nirgrantha (who is free from all bonds)

TEACHINGS (JAIN AGAMAS)

- Ahimsa (non-violence)
- Satya (truth)
- Asteya (non-stealing)
- Aparigraha (non-attachment)
- Brahmacharya (chastity) (propounded by Mahavira)

Mahavira and his disciples taught in Prakrit to teach ordinary people

Drishti IAS

Reincarnation in Tibetan Buddhism

Why in News?

The **Dalai Lama** has named a **US-born Mongolian boy** as the **10th Khalkha Jetsun Dhampa**, the head of the **Janang tradition of Tibetan Buddhism** and the **Buddhist spiritual head of Mongolia.**

➢ This announcement has brought attention back to the larger question of the **Dalai Lama's own reincarnation,** which is a civilizational struggle between China and Tibetans over who controls **Tibetan Buddhism.**

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What is the Reincarnation in Tibetan Buddhism?

- **Buddhism Schools in Tibet:**
  - ○ **Buddhism** became the **predominant religion in Tibet by the 9th century AD.** Tibetan Buddhism has four major schools: **Nyingma, Kagyu, Sakya, and Gelug.**
  - ○ Th**e Janang school is one of the smaller schools** that grew as an offshoot of the Sakya school. The **Dalai Lama belongs to the Gelug school.**

- **History of Reincarnation:**
  - ○ The **cycle of birth, death and rebirth** is one of Buddhism's key beliefs, although early Buddhism did not organise itself based on this **belief in reincarnation.**
  - ○ However, **Tibet's hierarchical system seemingly emerged in the 13th century,** and the first instances of formally recognizing the reincarnations of lamas can be found at this time.
  - ○ The **Gelug school developed a strong hierarchy and instituted the tradition of succession through reincarnation**, with the **5th grand lama of the school being conferred the title of Dalai Lama.**

- **Reincarnation in Tibetan Buddhism:**
  - ○ According to Tibetan Buddhist tradition, the **spirit of a deceased lama** is reborn in a child, which secures a continuous line of succession through **successive re-embodiments.**
  - ○ Several procedures are followed to recognize **'Tulkus'** (recognised reincarnations), including the **predecessor leaving guidance regarding his reincarnation,** the **prospective child undergoing multiple 'tests',** and other **oracles and lamas with the power of divination being consulted** before the final proclamation is made.
  - ○ There are also procedures to iron out disputes, such as making the final decision by **divination employing the dough-ball method before a sacred image.**

What About India's Association with the Dalai Lama?

- India and the Dalai Lama have had a **long-standing relationship dating back to 1959** when the **Dalai Lama fled Tibet and sought refuge in India.**
  - ○ India has since been the home to the **Dalai Lama and the Tibetan government-in-exile,** providing them with **political asylum,** and has **supported the Tibetan cause for autonomy from China.**

- Over the years, India has taken a **diplomatic stance on the Tibetan issue.** India has also refused to **endorse China's position on the reincarnation of the Dalai Lama,** insisting that it is a **religious matter that should be decided by the Tibetan people themselves.**

- In recent years, **India-China relations have been strained**, and the Dalai Lama's presence in India has become a contentious issue for China.

Who is Dalai Lama?

- Dalai Lama is a title given by the Tibetan people for the foremost spiritual leader of the Gelug or **"Yellow Hat" school of Tibetan Buddhism**, the newest of the classical schools of Tibetan Buddhism.
  - ○ The **14th and current Dalai Lama is Tenzin Gyatso.**

- The Dalai Lamas are believed to be **manifestations of 'Avalokiteshvara' or Chenrezig**, the Bodhisattva of Compassion and the patron saint of Tibet.

- **Bodhisattvas** are realized beings inspired by a wish to attain Buddhahood for the benefit of all sentient beings, who have vowed to be reborn in the world to help humanity.

Pattanam Site

Why in News?

Recently, some excavations have uncovered the Pattanam Site in Kerala, revealing that Pattanam was a thriving urban center from the **5th century B.C.** to the **5th century A.D.**

What are the Key Points of Pattanam Site?

- **About:**
  - ○ Pattanam, located in central Kerala, is home to the **only multi-cultural archaeological site** on the southwestern coast of the Indian subcontinent.
  - ○ The excavations have uncovered **less than 1% of the site so far**, but the evidence has found that it was a thriving urban center around 5th century A.D., with its **peak phase from 100 B.C. to A.D. 300.**
  - ○ It was known as Muziris, the **"first emporium" of the Indian Ocean**, having rigorous cultural and commercial exchanges between the **Greco-Roman classical age** and ancient **South Indian civilization.**

Note:

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- The name Muziris is believed to have originated from the Tamil word "Muciri", which means **"the land of seven rivers"**.

➢ **Pattanam Excavations:**
  ○ The technological, metallurgical, literary, and artistic advances of this phase bear witness to rigorous cultural and commercial exchanges.
  ○ The Pattanam excavations have unearthed over 45 lakh sherds (ceramic fragments); these include approximately 1.4 lakh belonging to the **littoral regions of the Mediterranean, the River Nile, the Red Sea, the western and eastern Indian Oceans, and the South China Sea**. Recent findings include the seal of a sphinx, native to the ancient Greek city of Thebes.

➢ **New Findings:**
  ○ **No Social Hierarchy:**
    • There is no evidence of **institutionalized religion or caste system** in ancient Pattanam.
  ○ **No Idol Worship:**
    • No idols of gods and goddesses or grandiose places of worship were found.
  ○ **Absence of Weaponry:**
    • The absence of sophisticated weaponry also **stands in contrast with some other Pattanam-contemporary sites.**
    • The people of Pattanam **may have been a peace-loving people** who did not harbor **religious and caste boundaries**.
  ○ **Cremation and Burial Practices:**
    • The burial practices at the Pattanam site were confined to fragmentary skeleton remains, and the **burials were of a "secondary" nature**, where the dead were cremated first and the **osseous remains ceremoniously buried later.**
  ○ **Secular Ethos:**
    • The absence of religious customs in the artifacts found suggests that there **was a secular ethos prevalent in society.**
    • People of widely differing backgrounds **were buried the same way,** pointing to the prevalence of a secular society.
    • The researchers focusing on **Sangam-era literature** connect the observation of secularism with the evidence from Sangam sources to point out that the **people of the time were secular**

in every aspect of their highly sophisticated and pluralistic society.

➢ **Significance:**
  ○ The Pattanam site holds **immense value for those who aspire to meaningful alternatives** to community living, looking beyond a casteless society towards a closer connection with nature.

What Greco-Roman Classical Age?

➢ The Greco-Roman classical age refers to a period of ancient history spanning from the 8th century BC to the 5th century AD, when the c**ultures of Greece and Rome exerted a significant influence** on the Mediterranean world and beyond.

➢ This period is known for its many achievements in art, literature, philosophy, science, and politics, and it laid the foundation for many of the cultural traditions that continue to shape the modern world.

➢ During this time, **Greece and Rome produced some of the most influential thinkers** (Socrates, Plato, Aristotle), artists, and leaders in human history, and their ideas and achievements continue to inspire people to this day.

Vaikom Satyagraha

Why in News?

As the year **2024 marks the centenary of the Vaikom Satyagraha**, Chief Minister of Kerala and Tamil Nadu jointly inaugurated the centenary celebrations.

What is Vaikom Satyagraha?

➢ **Background:**
  ○ The princely state of Travancore had a **feudal, militaristic, and ruthless system** of custom-ridden government, some of the most rigid, refined and ruthless social norms and customs were seen in Travancore.
    • Lower castes like the **Ezhavas and Pulayas** were considered polluting and various rules were in place to distance them from upper castes.
    • These included a prohibition, not just on temple entry, but even on walking on the roads surrounding temples.

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- **Contribution of Leaders:**
  - In 1923, Madhavan presented the issue as a resolution at the Kakinada meet of All India Congress Committee. Subsequently, it was taken up by the Congress Untouchability Committee formed by the Kerala Pradesh Congress Committee in January 1924.
  - Madhavan, K.P. Kesava Menon who was the then secretary of Kerala Pradesh Congress Committee and Congress leader and educationist **K. Kelappan (also known as Kerala Gandhi)** are considered **the pioneers of the Vaikom Satyagraha movement.**
- **Factors Leading to Satyagraha:**
  - **Christian missionaries,** supported by the East India Company, had expanded their reach and many **lower castes converted to Christianit**y to escape the clutches of an oppressive system that continued to bind them.
  - **Maharaja Ayilyam Thirunal,** took many **progressive reforms.**
    - Most important of these was the **introduction of a modern education** system with free primary education for all – **even lower castes**.
  - Forces of capitalism and these reforms created new social hierarchies – which were not always congruent with traditional ones.
- **Beginning of Satyagraha:**
  - **On March 30, 1924,** the **Satyagrahis walked** in procession towards the forbidden public roads. They were **stopped** 50 yards away from the place where a board cautioning the oppressed communities against walking on the roads (surrounding the **Vaikom Mahadeva temple**), was placed.
  - Dressed in khadi and wearing khadi caps, **Govinda Panikkar (Nair), Bahuleyan (Ezhava)** and **Kunjappu (Pulaya),**defied the prohibitionary orders.
  - The **police stopped them**. In protest, the three men sat on the road and were arrested.
  - Then on, every day, three volunteers from three different communities were sent to walk on the prohibited roads.
  - Within a week, the **leaders of the movement were all arrested.**
- **Role of Women:**
  - Periyar's wife **Nagammai** and sister **Kannammal**, played an unprecedented role in the fight.
- **Arrival of Gandhi:**
  - **Gandhi arrived** at Vaikom in **March 1925**, held a series of discussions with leaders of various caste groups and met Maharani Regent at her Varkala camp.
  - The Vaikom Satyagraha was **officially withdrawn on November 30, 1925** after consultations between Gandhi and W.H. Pitt (police commissioner of Travancore).
  - A compromise was reached following the release of all prisoners and grant of access to roads.
- **Temple Entry Proclamation:**
  - **In 1936,** the historic **Temple Entry Proclamation** was **signed** by the Maharaja of Travancore which removed the age-old ban on the entry of temples.
- **Significance:**
  - Amidst rising nationalist sentiment and agitations across the country, it foregrounded social reform.
  - For the first time, **it brought Gandhian methods of nonviolent protest to Travancore.**
  - The movement continued for over 600 days, non-stop, through social pressure, police crackdowns and even natural disaster in 1924, is admirable.
  - The Vaikom satyagraha saw previously unseen unity across caste lines.

Conclusion

Till 1917, the Indian National Congress refused to take up social reform. But with the rise of Gandhi and increased activism within lower caste communities and untouchables, social reform soon found itself front and Centre of Congress's and Gandhi's politics.

Note:

Geography

Highlights

- Subansiri Dam Project
- Avalanche
- 5th International Conference on Disaster Resilient Infrastructure
- Internet Connectivity in Andaman and Nicobar Islands
- Western Disturbance Threatens India's Wheat Crop
- El Nino
- Sunken Ocean Floor above Earth's Core

Subansiri Dam Project

Why in News?

The Subansiri Lower Hydroelectric project (SLHEP) on the **Assam-Arunachal border** was recently hit by a **landslide** during pre-monsoon rain.

➢ However, no damage has been caused to the project and **it is set to become operational by June 2023.**

What is a Landslide?

➢ **About:**
  ○ A landslide is defined as the movement of a mass of rock, debris, or earth down a slope. The term encompasses 5 modes of slope movement: **falls, topples, slides, spreads, and flows.**

➢ **Major Causes:**
  ○ **Geology:** Characteristics of the material; the earth or rock might be weak or fractured, or different layers may have different strengths and stiffness.

  ○ **Morphology:** Structure of the land; slopes that lose their vegetation to fire or drought are more vulnerable to landslides.

  ○ **Natural Causes:** Heavy rainfall, earthquakes, snowmelting and undercutting of slopes due to flooding.

  ○ **Human Activity:** Agriculture and construction increases the risk of a landslide.

➢ **Landslide-Prone Areas:**
  ○ Entire Himalayan tract
    - ~66.5% of the landslides are reported from the North-western and ~18.8% from Northeastern Himalayas.
  ○ **Western Ghats** (~14%) and **Konkan areas**
  ○ **Nilgiris** in Tamil Nadu

What is the Subansiri Lower Hydroelectric Project?

➢ **About SLHEP:**
  ○ SLHEP is an **under-construction gravity dam** (nearly 90% of the work completed) with capacity **2000 MW** (8x250 MW).
  ○ It is the **biggest hydroelectric project undertaken in India so far** and is a **run of river scheme** on **river Subansiri.**
    - A run-of-river dam is one in which the **flow of water in the river downstream of the dam is the same as the flow of water upstream** of the dam.
    - In other words, the dam doesn't hold back/store water behind it; it runs with the river.
  ○ The construction of SLHEP is being undertaken by **National Hydroelectric Power Corporation (NHPC) Limited.**

Note:

- ➢ **About Subansiri River:**
  - ○ **Subansiri, or "Gold River"** is the **largest tributary of the Upper Brahmaputra** river.
  - ○ It **originates from the Tibetan Himalayas** and makes its way to India via **(Miri Hills) Arunachal Pradesh.**
- ➢ **Controversy regarding SLHEP:** The project had been kept pending due to local agitation over several **dam safety** and **administrative issues** involved in the implementation of the project like:
  - ○ SLHEP contravenes the **1980 Brahmaputra Board Act** by transferring the work of Water Resources Department of Subansiri Basin from the Brahmaputra Board to the public and private sector.
  - ○ As assessed by IIT-Roorkee, there is also the issue of **increased seismic threat levels to the dam.**

> **Note:**
> - ➢ **Arunachal Pradesh is often dubbed as the powerhouse of the country** and is home to 34% (50,328 megawatts) of the country's 148,701 MW hydropower potential.
>
> **What is a Gravity Dam?**
> - ➢ Gravity dam is constructed from concrete or cement (unlike mud and masonry stones used in embankments).
> - ➢ It is designed to hold back water by primarily utilising the weight of the material alone to resist the horizontal pressure of water pushing against it

Avalanche

Why in News?

Recently, a massive **Avalanche** hit Sikkim's Nathu La.

What is Avalanche?

- ➢ **About:**
  - ○ An avalanche is a sudden, rapid flow of **snow, ice, and debris down** a mountain or slope.
  - ○ It can be triggered by various factors such as heavy snowfall, rapid temperature changes, or human activity.
  - ○ Many regions that are prone to avalanches **have specialized teams that monitor and control avalanche risks** by using various methods such

as explosives, snow barriers, and other safety measures.

- ➢ **Types:**
  - ○ Rock Avalanches (which consist of large segments of shattered rock),
  - ○ Ice Avalanches (which typically occur in the vicinity of a glacier),
  - ○ Debris Avalanches (which contain a variety of unconsolidated materials, such as loose stones and soil).
- ➢ **Causes:**
  - ○ **Weather Conditions:** Heavy snowfall, rapid temperature changes, strong winds, and rain can all contribute to avalanche conditions.
  - ○ **Slope Conditions:** The steepness, orientation, and shape of **a slope can contribute to the likelihood of** an avalanche occurring. Steep slopes with a convex shape are particularly prone to avalanches.
  - ○ **Snowpack Conditions:** The structure and stability of the snowpack **can also contribute to avalanche conditions**. Weak layers of snow or ice within the snowpack can cause it to collapse and trigger an avalanche.
  - ○ **Human Activity:** Skiers, snowmobilers, and other recreational users can trigger avalanches by their movements on the slope.
  - ○ **Natural Events:** Earthquakes, volcanic eruptions, and rockfalls can all trigger avalanches.

How are Avalanches different from Landslides?

- ➢ Avalanches and landslides are both types of mass movements, but they occur in different environments and involve different materials.
- ➢ An avalanche is a rapid flow of snow, ice, and debris down a mountain or slope, while a **landslide is a movement of rock,** earth, or debris down a slope or cliff.
- ➢ Avalanches typically occur in mountainous areas that have heavy snowfall and steep slopes. On the other hand, **landslides can occur in a wide range of environments and can be triggered by various factors** such as heavy rainfall, earthquakes, volcanic activity, or human activity.
- ➢ Both avalanches and landslides can be dangerous and potentially deadly, and it is important to take necessary precautions to avoid them.
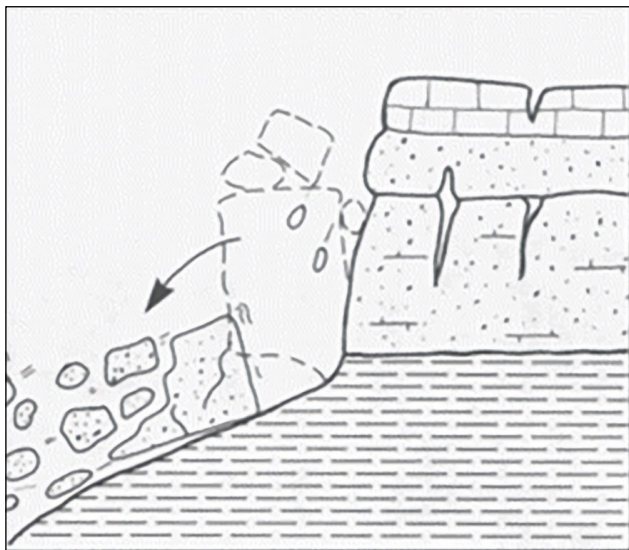
What are India's Efforts in Managing Disaster?

➢ **Establishment of National Disaster Reaction Force (NDRF):**

   ○ India has increasingly mitigated and responded to all types of disasters, including with the establishment of its **NDRF**, the world's largest rapid reaction force dedicated to disaster response.

➢ **India's Role as a Foreign Disaster Relief:**

   ○ India's foreign humanitarian assistance has increasingly included its military assets, primarily deploying naval ships or aircraft to deliver relief.

   ○ In line with its diplomatic policy of **"Neighbourhood First,"** many of the recipient countries have been in the region of South and Southeast Asia.

➢ **Contribution to Regional Disaster Preparedness:**

   ○ Within the context of the **Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC),** India has hosted DM Exercises that allow NDRF to demonstrate for counterparts from partner states the techniques developed to respond to various disasters.

➢ **Managing Climate Change related Disaster:**

   ○ India has adopted the **Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals (2015-2030), and the Paris Agreement** on Climate Change, all of which make clear the connections among DRR, Climate Change Adaptation (CCA), and sustainable development.

What are the Key Facts of Nathu La?

➢ Nathu La, one of the highest motorable roads in the world, is a mountain pass in the Himalayan peaks situated on the Indo-Tibetan border 14450 ft. above sea level.

➢ Nathu means **'listening ears', and La means 'pass'.**

➢ It is an open trading border post between India and China.

➢ The other passes located in the state of Sikkim are **Jelep La Pass, Donkia Pass, Chiwabhanjang Pass.**

What are the Other Important Passes of India?

Pass	Link/Features
Banihal Pass	Kashmir Valley with the outer Himalaya and the plains to the south.
Bara-Lacha-La Pass	Lahaul district in Himachal Pradesh with Leh district in Ladakh.
Fotu La Pass	Leh with Kargil of Ladakh
	Cont...

Note:

Pass	Link/Features
Rohtang Pass	Kullu Valley with the Lahaul and Spiti Valleys of Himachal Pradesh.
Shipki La Pass	Kinnaur district of Himachal Pradesh with Autonomous Region of Tibet, China.
Jelep La Pass	Sikkim with Autonomous Region of Tibet, China.
Lipu Lekh Pass	Chaudans valley of India with Autonomous Region of Tibet, China. It is located close to the tri junction of Uttarakhand (India), China and Nepal.
Khardung La	Ladakh with Siachen glacier. It is the highest motorable pass in the world.
Bom di La	It is in Arunachal Pradesh

5th International Conference on Disaster Resilient Infrastructure

Why in News?

Recently, the Prime Minister of India, addressed the 5th **International Conference on Disaster Resilient Infrastructure (ICDRI)** 2023.

What is ICDRI?

➢ **About:**
  ○ **ICDRI is the annual international conference of the Coalition for Disaster Resilient Infrastructure (CDRI)** in partnership with member countries, organizations and institutions to strengthen the global discourse on disaster and climate-resilient infrastructure.

➢ **Highlights of ICDRI 2023:**
  ○ The Prime Minister said that since **India is leading the G20 group**, the **CDRI will be included in many important discussions.**
    ● This means that the solutions discussed in the CDRI will be considered at the highest levels of global policymaking.

What is CDRI?

➢ **About:**
  ○ **CDRI** is an Independent International Organization consisting of global partnership of national governments, **United Nations** agencies and programs, multilateral development banks and financing mechanisms, the private sector, and academic and research institutions.
    ● It aims to increase the resilience of infrastructure systems to climate and disaster risks, thereby ensuring **sustainable development.**
    ● It was launched in 2019, at the **United Nations Climate Action Summit in New** York.
  ○ CDRI is India's second major global initiative after the **International Solar Alliance (ISA).**
    ● The CDRI **Secretariat is based in New Delhi,** India.

➢ **Members:**
  ○ Since its inception, **31 countries, 6 international organisations and 2 private sector organisations** have joined CDRI as members.

➢ **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 Accord provides for sustainable and inclusive growth.

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, having pilot projects, especially in **Small Island Developing States or SIDS.**
    ● SIDS face the biggest threat from climate change.
  ○ India's space agency **ISRO** will build a special data window for them to provide them with timely

Note:

information about cyclones, coral-reef monitoring, coastline monitoring etc. through satellite.

➢ **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 **United Nations 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 Small Island Developing States (SIDS).

Internet Connectivity in Andaman and Nicobar Islands

Why in News?

   Port Blair has seen significant improvements in Internet Connectivity since August 2020, when the **Chennai-Andaman & Nicobar Islands (CANI)** cable was inaugurated.

➢ However, Andaman & Nicobar Islands (ANI) is currently encountering a **number of challenges that necessitate the adoption of an objective viewpoint** in order to ensure the comprehensive and enduring progress of ANI towards **inclusivity and sustainability.**

What are the Recent Developments in Internet Connectivity in ANI?

➢ The undersea cable between **the Andaman and Nicobar Islands and Chennai**, i.e., CANI, connecting the Union Territory to the global Internet, has seen **a reasonable level of interest from telecom operators**.

➢ The **Universal Service Obligation Fund (USOF)** provided information that telecom operators have purchased over **70 GBPS of bandwidth for internet connectivity in Andaman and Nicobar Islands (ANI).**

➢ Airtel and BSNL account for the lion's share of the bandwidth purchased, with 60 GBPS being allocated to the two telcos. Airtel even launched **5G services in Port Blair.**

What is the Significance of ANI for India?

➢ **About:**
  ○ The Andaman and Nicobar Islands are a group of islands at the **southeastern edge of the Bay of Bengal.**
  ○ They are part of the **union territory of India** and are **situated approximately 1,400 km from the Indian mainland.**

➢ **Significance:**
  ○ **Treasure of Tribes:** The Andaman and Nicobar Islands are home to 5 **Particularly Vulnerable Tribal Groups**: **Great Andamanese, Jarwas, Onges, Shompens and North Sentinelese.**
  ○ **Strategic Location:** They give India a commanding position over the **Sea Lines of Communication (SLOCs)** and the considerable traffic that flows to and fro between the **Indian and Pacific Oceans through the Malacca Strait**.
  ○ **Space for Maritime Partners**: India's key maritime partners such as the **US, Japan, Australia and France** acknowledge and recognise the strategic location of the Andaman and Nicobar.
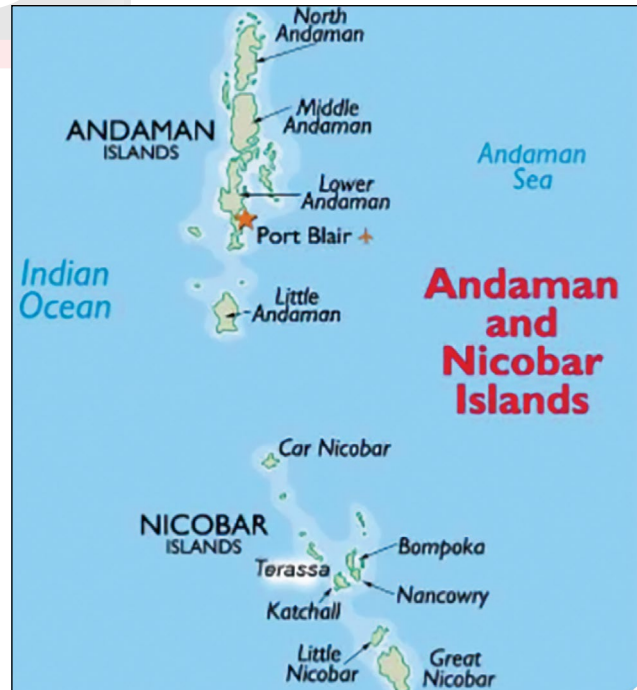
  ○ These islands not only provide India with a **key maritime space** but also carry significant potential in shaping the strategic and military dynamics of the **Indian Ocean region.**

Note:

➤ **Recent Developmental Plans for ANI:**
  ○ **Japan's Overseas Development Assistance:** Japan approved a **USD 265 crore grant aid for ANI** development projects in 2021.
  ○ **NITI Aayog's Project for Great Nicobar:** It includes an international containe**r transhipment terminal, an airport, a power plant, and a township.**

  NITI Aayog's Proposal for Little Andaman: The plan calls for the development of a **new greenfield coastal city** to compete with **Singapore and Hong Kong.**

What are the Challenges Related to ANI?

➤ **Unsustainable Development:** Andaman and Nicobar have become a major **tourist attraction**, and this has resulted in **many development projects being initiated in this region.**
  ○ While at one side it will transform the islands substantially, i**t would also cause loss of ecological stability.**
  ○ Developmental activities are also **impacting the coral reefs in the area**, which are already under threat from warming oceans, and are of enormous ecological importance.
  ○ Environmentalists have also flagged the **loss of mangroves on the island as a result of the development project.**
➤ **Geological Volatility**: The Andaman and Nicobar island's groups lie in a **seismically highly active zone**. Due to this, the region is prone to a number of natural disasters.
➤ For instance, in 2004 an earthquake and **accompanying tsunami devastated large parts of the island chain.**
  ○ **Nicobar and Car Nicobar (northernmost Nicobar Island)** lost almost one-fifth of its population and close to 90% of its mangroves.
➤ **Geo-Political Instability**: Andaman and Nicobar Islands are part of the Indo-Pacific geopolitical theatre, where **China is actively trying to expand its influence, potentially posing a threat to India's blue economy** and maritime security.
➤ **Encroachment in Tribal Space:** While **PVTGs** are accorded the highest level of protection by local administration, they still face numerous challenges **due to encroachment into their areas in the name of development,** and lack of effective rehabilitation program.

Western Disturbance Threatens India's Wheat Crop

Why in News?

Recent inclement weather conditions, including **an unusual rise in mercury in February and untimely spells of widespread rain**, gusty winds, and hails during March under the influence of **western disturbances** in key wheat-producing states have left farmers worried about a potential drop in yield, output, and quality of wheat.

What is the Impact of Untimely Rains and Winds on Wheat Crops in India?

➤ **Impact of Untimely Rains and Winds:**
  ○ The **India Meteorological Department (IMD)** reported that the rains, along with stormy winds between 40-50 kilometers per hour, could be detrimental to the crop's health, especially if they occur close to the ripening and harvesting stage. Unfortunately, there have been instances of crop flattening and waterlogging in fields, which could further damage the ready-to-harvest wheat crop.
➤ **Impact on Production:**
  ○ According to the researchers, with the recent untimely rains, **India's wheat production in the agriculture year 2022-23 is likely to be 102.9 MT,** which is less than the Union government's estimate of 112 MT. However, the Centre remains optimistic that wheat production will be close to 112 MT due to increased acreage and better yield this season, despite a slight production loss due to recent adverse weather conditions.
➤ **Impact on Price and Foodgrain Security:**
  ○ If India's wheat production drops below the government's estimate, it could **lead to a hike in the prices of wheat and wheat-based products** in the domestic market.
  ○ Additionally, any decline in wheat production could lead to a **potential foodgrain security issue.**

## *What are the Key Points related to Wheat?*

➤ **About:**
  ○ This is the **second most important cereal crop in India after rice.**
  ○ It is the main food crop, in the north and north-western part of the country.

Note:

○ Wheat is **a rabi crop** that requires a cool growing season and bright sunshine at the time of ripening.

○ Success of the **Green Revolution** contributed to the growth of Rabi crops, especially wheat.

➤ **Temperature:**

○ Between 10-15°C (Sowing time) and 21-26°C (Ripening & Harvesting) with bright sunlight.

➤ **Rainfall:**

○ Around 75-100 cm.

➤ **Soil Type:**

○ Well-drained fertile loamy and clayey loamy (Ganga-Satluj plains and black soil region of the Deccan).

➤ **Top Wheat Producing States:**

○ Uttar Pradesh, Punjab, Haryana, Madhya Pradesh, Rajasthan, Bihar, Gujarat.

➤ **Status of Indian Wheat Production and Export:**

○ India is the **world's second-biggest wheat producer** after China. But it **accounts for less than 1% of the global wheat trade.** It keeps a lot of it to provide subsidised food for the poor.

○ Its top export markets are Bangladesh, Nepal and Sri Lanka - as well as the United Arab Emirates (UAE).

➤ **Government Initiatives:**

○ Macro Management Mode of Agriculture, **National Food Security Mission** and Rashtriya Krishi Vikas Yojana are few government initiatives to support wheat cultivation.

Major Wheat Producing States
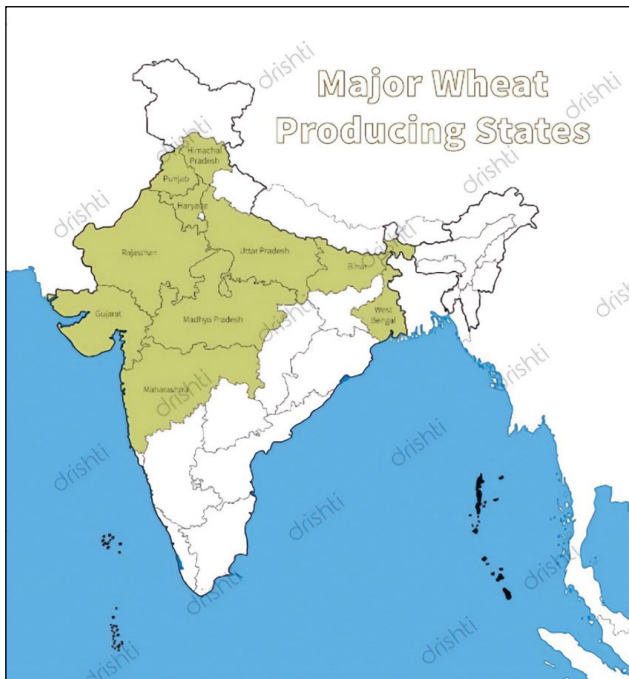
What are Western Disturbances?

➤ Western disturbances are **storms that originate in the Caspian or Mediterranean Sea**, and **bring non-monsoonal rainfall to northwest India,** according to the **India Meteorological Department (IMD).**

➤ They are labelled as an **extra-tropical storm** originating in the Mediterranean, is an area of low pressure that brings sudden showers, snow and fog in northwest India.

➤ It arrives with rain and snow in Pakistan and northern India. The moisture which WDs carry with them **comes from the Mediterranean Sea and/or from the Atlantic Ocean.**

➤ WD brings winter and pre-monsoon rain and is important for the development of the **Rabi crop** in the Northern subcontinent.

➤ The WDs are not always the harbingers of good weather. Sometimes WDs can cause extreme weather events like floods, **flash floods**, **landslides**, dust storms, hailstorms and **cold waves** killing people, destroying infrastructure and impacting livelihoods.

El Nino

Why in News?

Many climate models have forecasted an **El Nino** in May 2023.

➤ A **record three-year La Niña** event ended in March **2023** and currently, the **equatorial Pacific Ocean is at normal temperatures**, known as the **neutral phase.**

What is El Nino?

➤ El Nino was first recognized by **Peruvian fishermen off the coast of Peru** as the appearance of unusually warm water.

○ The Spanish immigrants called it El Nino, meaning "the little boy" in Spanish.

➤ 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.

➤ During an El Nino event, the **Sea Surface Temperatures (SST)** in the equatorial Pacific Ocean off the northern coast of South America became at least 0.5 degrees Celsius warmer than the long-term average.

Note:

- In the case of a strong El Nino event as occurred in 2015-2016, anomalies can reach as high as 3°C, which is a record.
- ➤ The El Nino event is **not a regular cycle, they are not predictable** and occur irregularly at two- to seven-year intervals.
  - Climatologists determined that El Nino occurs simultaneously with the Southern Oscillation.
   - The Southern Oscillation is a change in air pressure over the tropical Pacific Ocean.

What do the Climate Models Say About Upcoming El Nino?

- ➤ **Impact on India:**
  - **Weak Monsoon for India:** The development of an El Nino in May or June 2023 may cause weakening of the southwest monsoon season, which brings around 70% of the total rainfall India receives and on which most of its farmers still depend.
    - However, **sub-seasonal factors such as the Madden-Julian Oscillation (MJO)** and monsoon low-pressure systems **can temporarily enhance rainfall** in some parts as witnessed in the year 2015.
  - **Hot Temperatures:** It may also cause heatwaves and droughts in India and other regions around the world such as South Africa, Australia, Indonesia and the Pacific Islands.
  - **Heavier Rainfall in the West:** It brings heavy rainfall and flooding to other regions such as California in the United States and could cause bleaching and death of coral reefs.
  - **Rising Global Average Temp:** The El Nino in 2023 and going into 2024 may push the global average temperature towards 1.5°C warmer than the preindustrial average.
  - The warming of the oceans is also one of the major impacts of an El Nino event.
    - This is when ocean heat content is already at a record high, according to the **World Meteorological Organization (WMO).**
- ➤ **Previous Such Occurrences – Impacts:**
  - In the 2015-2016, there were **widespread heatwaves in India that killed around 2,500 people** in each of the years.

- Coral reefs around the world also suffered from bleaching and the s**ea level rose by 7 millimetres** due to thermal expansion.
- The El Nino, along with global warming, had made **2016 the warmest year on record.**
- **El Nino events of 1982-83 and 1997-98** were the **most intense** of the 20th century.
  - During the 1982-83 event, **sea surface temperatures in the eastern tropical Pacific were 9-18°C above normal.**

What is MJO?

- ➤ The MJO is made up of two parts: **an enhanced rainfall phase and a suppressed rainfall phase.**
  - During the enhanced phase, surface winds converge, causing air to rise and create more rainfall. In the suppressed phase, winds converge at the top of the atmosphere, causing air to sink and leading to less rainfall.
  - This dipole structure moves west to east in the Tropics, creating more cloudiness and rainfall in the enhanced phase, and more sunshine and dryness in the suppressed phase.
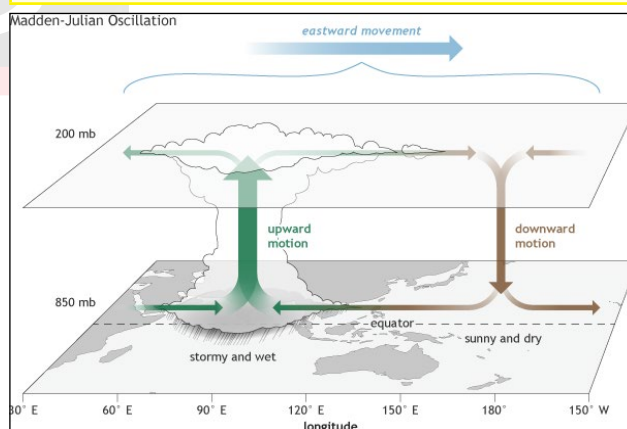
How does ENSO Affect India?

- ➤ The influence of ENSO on India's climate is most pronounced during the monsoon season. During an El Niño event, **India experiences below-average rainfall.**
  - The El Niño also leads to a rise in temperatures, exacerbating heat waves and causing heat-related health issues.
- ➤ On the other hand, during a La Niña event, **India experiences above-average rainfall.**
  - This can lead to flooding and landslides, damaging crops and infrastructure. However, La Niña also

Note:

brings cooler temperatures, which can provide relief from heat waves.

Sunken Ocean Floor above Earth's Core

Why in News?

Recently, Geologists have **discovered a previously unknown layer between the core and the mantle of the Earth, likely to be a thin but dense sunken ocean floor.**

➢ This layer is **pencil-thin in geological terms, measuring tens of kilometers,** which is minuscule when compared to the thickness of Earth's other layers.

What are the Key Highlights?

➢ The discovery of this **ocean floor layer could play an important role in how heat escapes from the core.**
  ○ The material from ancient ocean floors can also get caught up in **mantle plumes, traveling** back to the surface through volcanic eruptions.

➢ There are mountains on the core, these underground **"mountains" could be up to 5 times taller than Mt. Everest,** and they could help explain the changes in physical properties between the outer core and the mantle, which are greater than those between the surface of the Earth and the air above it.

➢ The subducted oceanic material could collect along the core-mantle boundary where it can be pushed by the slowly flowing rock in the mantle over time. This suggests that **Earth's history is more complex than previously thought**, with the possibility of **multiple sunken ocean floors** adding to the complexity of the planet's geological makeup.

What are the Implications for Future Research?

➢ This new discovery opens up new avenues of research for geologists and could lead to a better understanding of **Earth's geological processes.**

➢ The detailed method used to probe a large portion of the southern hemisphere using sound wave echoes from the core-mantle boundary could be used in other parts of the world to uncover similar anomalies.

➢ It also highlights the importance of continued investment in **high-resolution imaging technology** for exploring the **mysteries of our planet's interior.**

What is an Ocean Floor?

➢ The **ocean floor is the bottom of the ocean** that covers more than 70% of the Earth's surface. **It has different features and depths depending on the location and the movement of tectonic plates**. The ocean floor can be divided into four main zones:
  ○ **Continental Shelf:**
    ● The **shallowest and widest part of the ocean floor.**
    ● Extends from the coast to the edge of the continent, where it drops sharply into the continental slope.
    ● Rich in marine life and resources, such as fish, oil, and gas.
  ○ **Continental Slope:**
    ● The steep slope that **connects the continental shelf to the abyssal plain**
    ● Cut by deep canyons and valleys that are formed by **underwater landslides and rivers of sediment.**
    ● Home to some **deep-sea creatures**, such as **octopuses, squids, and anglerfish.**
  ○ **Abyssal Plain:**
    ● The **flattest part of the ocean floor.**
    ● Covers most of the ocean basin and **lies between 4,000 and 6,000 meters below sea level.**
    ● Covered by a thick layer of fine sediments that are carried by ocean currents and settle on the seafloor.
    ● Inhabited by some of the most bizarre and mysterious animals on Earth, such as giant tube worms, bioluminescent fish, and vampire squids.
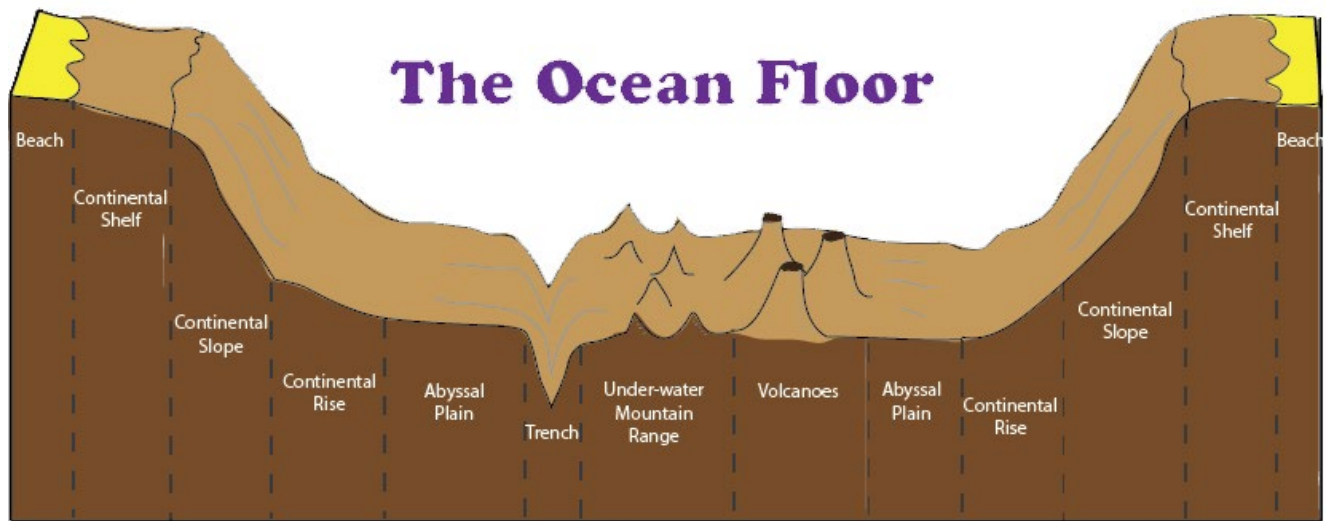 ○ **Oceanic Deeps or Trenches:**
    ● These areas are **the deepest parts of the oceans.**
    ● The trenches are relatively steep sided, narrow basins. They are some 3-5 km deeper than the surrounding ocean floor.
    ● They occur at the bases of continental slopes and along island arcs and **are associated with active volcanoes and strong earthquakes.**
    ● That is why they are very significant in the study of plate movements. As many as 57 deeps have been explored so far; of which **32 are in the Pacific Ocean; 19 in the Atlantic Ocean and 6 in the Indian Ocean.**

Note:

The Ocean Floor

Beach

Continental Shelf

Continental Slope

Continental Rise

Abyssal Plain

Trench

Under-water Mountain Range

Volcanoes

Abyssal Plain

Continental Rise

Continental Slope

Continental Shelf

Beach

■■■

Miscellaneous

Highlights

- Solar Energy Corporation of India Limited
- International Aviation Safety Assessment
- Trademark
- United Nations Democracy Fund

- C R Rao will Receive the 2023 International Prize in Statistics
- World Health Day 2023
- Contamination Concerns over Indian Eye drops in US
- Seed Bank at Asola Bhatti Sanctuary

Solar Energy Corporation of India Limited

Why in News?

Recently, the Solar Energy Corporation of India Limited (SECI) has been recognized as a **Miniratna Category-I Central Public Sector Enterprise (CPSE)** by the **Ministry of New and Renewable Energy (MNRE), Govt. of India**.

What is Solar Energy Corporation of India Limited?

➢ **About:**
  ❍ **SECI** was incorporated in 2011 and serves as the **primary implementing agency** of the MNRE for Renewable Energy schemes/projects towards fulfilling **India's international commitments**.

➢ **Achievement:**
  ❍ SECI has already **awarded Renewable Energy (RE) project capacities of over 56 GW** and is also involved in setting up of projects through its **own investments and for other public sector entities as Project Management Consultant (PMC)**.
    - SECI has also achieved the **highest credit rating of AAA by ICRA.**

➢ **Contribution to Solar Sector:**
  ❍ SECI has also played a **key role in the development of innovative solar power technologies**, such as **floating solar power plants** and solar-wind hybrid systems.
    - It has been involved in the auction of large-scale solar projects, which has attracted **significant investments from domestic and international players.**

  ❍ In addition, SECI has implemented various initiatives to promote the use of solar energy in rural and remote areas of the country, such as **off-grid solar power projects and solar pumps for irrigation**.
    - These initiatives have helped to improve the quality of life of people living in these areas by providing **access to clean energy.**

What are the Criteria for Miniratna Status for CPSEs?

➢ **Miniratna Category-I Status:** The CPSEs which have made profit in the last three years continuously, pre-tax profit is **Rs.30 crores** or more in at least one of the three years and have a positive net worth are **eligible to be considered for grant of Miniratna-I status.**

➢ **Miniratna Category-II Status:** The CPSEs which have **made profit for the last three years continuously** and have a positive net worth are eligible to be considered for grant of Miniratna-II status.
  ❍ **Miniratna CPSEs should have not defaulted in the repayment of loans/interest** payment on any loans due to the Government.
  ❍ **Miniratna CPSEs shall not depend upon budgetary support** or Government guarantees.

International Aviation Safety Assessment

Why in News?

The aviation safety regulator of the U.S. - the Federal Aviation Administration (FAA), has retained the **"Category 1" status for India's aviation safety** oversight following a review.

Note:

What is the International Aviation Safety Assessment?

➢ **About:**
  ○ The **FAA conducted** the International Aviation Safety Assessment (IASA) program over a one-year period, which included physical audits and a further review in 2022.
  ○ The program **focuses on** three broad areas:
    ● **Personnel licensing**
    ● **Operation of aircraft**
    ● **Airworthiness** of aircraft
  ○ This assessment determines whether a country's aviation safety oversight standards comply with the **International Civil Aviation Organization (ICAO)** safety standards.

➢ **Findings about India:**
  ○ The FAA has informed the **DGCA (Directorate General of Civil Aviation)** that India meets the international standards for aviation safety oversight of the **Chicago Convention** and its Annexes and continues to retain FAA IASA **Category 1 status** which was last assessed in July 2018.
    ● The countries listed under **'Category-1' meet the ICAO standards for safety oversight of civil aviation.**

➢ **Significance of Findings for India:**
  ○ It reaffirms India's reputation **as a safe and reliable aviation market.**
  ○ It allows Indian airlines to **continue to operate flights to the U.S**. and enter into codeshare partnerships with U.S. carriers, which can **help to increase trade and investment.**
  ○ It demonstrates **India's commitment to complying with safety standards** established by the UN aviation watchdog, ICAO.

What is the International Civil Aviation Organisation?

➢ **ICAO is a United Nations (UN) specialized agency**, established in **1944**, which laid the foundation for the standards and procedures for peaceful global air navigation.

➢ The **Convention on International Civil Aviation** was signed on 7th December 1944 in Chicago (hence called **Chicago Convention 1944**).

  ○ It established the core principles permitting international transport by air, and also led to the creation of the ICAO.
  ○ It **covers** a wide range of issues, including the rights of aircraft in **international airspace, the registration of aircraft, safety standards, air traffic control, and environmental protection.**

➢ One of the objectives of ICAO is to **foster the planning and development of international air transport** so as to ensure the safe and orderly growth of international civil aviation throughout the world.
  ○ India is among its 193 members.

➢ It is **headquartered in Montreal, Canada.**

Trademark

Why in News?

The Delhi High Court has restrained Khadi Designing Council of India and Miss India Khadi Foundation from using the **'KHADI' Trademark** after the **Khadi and Village Industries Commission (KVIC)** filed a Trademark Infringement Lawsuit.

➢ The court held that the defendants had infringed KVIC's trademark and engaged in passing it off.

➢ A trademark infringement lawsuit is a legal action taken by a trademark owner to stop **others from using their trademark without permission,** or in a way that could cause confusion or dilute the value of the trademark.

What is a Trademark?

➢ A trademark is a symbol, word, phrase, design, or combination of these elements that is used to **identify and distinguish the goods or services of one company** from those of another.

➢ Trademarks are protected by **Intellectual Property Rights (IPR)**.

➢ Trademarks can be registered with government **agencies to provide legal protection against unauthorized** use by others.

➢ In India, trademarks are protected under the **Trade Marks Act 1999** and its subsequent amendments.
  ○ The Act provides for the **registration of trademarks and establishes a system** of penalties for infringement.

Note:

➢ Trademark infringement occurs when someone uses a mark that is identical or deceptively similar to a registered trademark **without the owner's permission. Infringement can result in legal action**, including damages, injunctions, and criminal sanctions.

➢ To maintain legal protection for a trademark, the owner must make regular use of it in connection with the goods or services for which it is registered. Failure to use a mark for an extended **period of time may result in the mark being canceled or invalidated.**

United Nations Democracy Fund

Why in News?

India is the fourth highest donor to the UN Democracy Fund (UNDEF)*, which funds at least 68 projects worldwide linked to George Soros's Open Society Foundation.*

➢ India has put George Soros's NGO on watchlist in 2016.

What is UNDEF?

➢ **About:**
   ○ UNDEF was established in 2005 by **UN Secretary-General** Kofi A. Annan **as a United Nations General Trust Fund** to **support democratization efforts** around the world.
      ● It was welcomed by the General Assembly in the Outcome Document of the 2005 World Summit.
   ○ UNDEF plays a unique role in complementing the UN's other work with governments to strengthen democratic governance around the world.

➢ UNDEF's Mandate and Projects:
   ○ UNDEF funds projects that empower civil society, promote human rights, and encourage the participation of all groups in democratic processes.
   ○ The majority of UNDEF funds go to local civil society organizations (CSOs).
      ● The **Advisory Board of the UNDEF offers policy guidance and funding** guidelines, considers proposals for funding, and recommends funding proposals for approval by the Secretary-General.
   ○ UNDEF **provides grant**s ranging from **USD 100,000 to USD 300,000.**

○ In 15 rounds of funding so far, UNDEF has supported over 880 two-year projects in more than 130 countries.

➢ **India's Support for UNDEF**:
   ○ India has contributed **over USD 32 million** since its inception (2005).
      ● **Top three** donors are **US, Sweden, and German**y.
   ○ **In 2022**, when India **contributed USD 150,000** to the fund, it was the fourth highest among 45 donors, after
   ○ India has **consistently supported UNDEF's mission** of promoting democratic governance worldwide through funding of projects carried out by local and international CSOs and NGOs.

C R Rao will Receive the 2023 International Prize in Statistics

Why in News?

Calayampudi Radhakrishna Rao, a prominent Indian-American mathematician and statistician, will be awarded the 2023 International Prize in Statistics, the equivalent of a **Nobel Prize** in the field.

What are the Works of C R Rao?

➢ **Background:**
   ○ Rao's remarkable paper, **published in 1945** in the Bulletin of the Calcutta Mathematical Society, demonstrated **three fundamental results** that **paved the way for the modern field of statistics** and provided statistical tools heavily used in science today.

➢ **Theory:**
   ○ **The Cramer-Rao Lower Bound**:
      ● Provides a means of **knowing** when a method for **estimating a quantity** is as good as any method can be.
   ○ **The Rao-Blackwell Theorem**:
      ● Provides a means of **transforming** an estimate into an **optimal estimate.** Together, these results form a foundation on which much of statistics is built.

○ **The Information Geometry**:
- Provided insights that **pioneered a new interdisciplinary field** that has flourished as "**information geometry.**
- Information geometry is the study of the geometrical structure of families of probability distributions.

What is the Significance of Rao's Contribution?

➢ His work on **information geometry** has aided the understanding and optimization of Higgs boson measurements at the **Large Hadron Collider,** and contributed to advancements in **artificial intelligence**, **data science**, signal processing, shape classification, and image segregation.

➢ **The Rao-Blackwell process** has been applied to stereology, particle filtering, and computational econometrics, among others.

➢ **The Cramer-Rao lower bound** is of great importance in diverse fields such as signal processing, spectroscopy, radar systems, multiple image radiography, risk analysis, and **quantum physics**.

What Other Awards Conferred to C R Rao?

➢ Padma Bhushan in1968.

➢ **Padma Vibhushan** in 2001.

International Prize in Statistics

➢ The International Prize in Statistics is awarded every two years by a collaboration among five leading international statistics organizations.

➢ The prize recognizes a major achievement by an individual or team in the statistics field, particularly an achievement of powerful and original ideas that have led to practical applications and breakthroughs in other disciplines.

➢ The prize is modeled after the Nobel prizes, Abel Prize, Fields Medal, and Turing Award.

World Health Day 2023

Why in News?

Every Year on 7th April World Health Day is celebrated. The date of 7 April marks the anniversary of the founding of **World Health Organisation** in 1948.

What are the Key Highlights of World Health Day?

➢ **About:**
- The idea of World Health Day was conceived at the First Health Assembly in **1948** and it came into effect in 1950.
- It is celebrated annually and each year it draws attention to a specific health topic of concern to people all over the world.

➢ **Theme for 2023:**
- Health for All

➢ **India on World Health Day:**
- To mark the occasion of World Health Day on April 7, a health camp and a flash mob was organized to create awareness on **non-communicable diseases (NCD)** among the public.

➢ **Importance:**
- World Health Day aims to raise awareness about global health issues, **promote health equity by addressing disparities,** encourage collaboration among stakeholders, and **highlight progress in improving health outcomes worldwide**. This includes educating people on the importance of good health, providing access to healthcare services, and **reducing the burden of diseases in disadvantaged communities and low- and middle-income countries.**

What is World Health Organization?

➢ **About:**
- United Nations' specialized agency for Health was founded in 1948.
- Its headquarters are situated in Geneva, Switzerland.
- There are 194 Member States, 150 country offices, six regional offices.
- It is an inter-governmental organization and works in collaboration with its member states usually through the Ministries of Health.

➢ **Objectives:**
- To act as the directing and coordinating authority on international health work.
- To provide assistance to the Governments, upon request, in strengthening health services.

○ To establish and maintain effective collaboration with the United Nations, specialized agencies, governmental health administrations, professional groups and such other organizations as may be deemed appropriate.

○ To promote cooperation among scientific and professional groups which contribute to the advancement of health.

➤ **Governance:**

○ World Health Assembly (WHA)

● WHA is WHO's decision-making body attended by delegations from all of WHO's member states,

● It is held yearly at Geneva, Switzerland.

● Specific health agenda prepared by the Executive Board remains the focus of this assembly.

➤ **Reports:** World Health Statistics, World Health Report, Global Tuberculosis Report, Global Health Observatory (GHO) data, Global Hepatitis Report, Global Report on Diabetes, Global Status Report on Alcohol and Health etc.,

Contamination Concerns over Indian Eye drops in US

Why in News?

US Centers for **Disease Control and Prevention (CDC)** and the **Food and Drug Administration (USFDA)** have raised concerns over a **drug-resistant bacteria strain allegedly linked to eye drops imported from India.**

➤ **Drugs Controller General of India (DCGI)** has written to the USFDA seeking details about the issue.

➤ Global Pharma Healthcare is recalling EzriCare eye drops from the US market and has halted the Production of ophthalmic (connected with the eye and diseases that affect it) products until the investigation is completed.

➤ Preliminary Reports by the Healthy ministry in India suggest contamination in the US came from opened bottles; as samples collected from the company were not contaminated.

What is the Status of Indian Pharmaceutical Sector?

➤ The **Indian Pharmaceuticals industry** plays a prominent role globally. **India ranks 3rd worldwide for production by volume and 14th by value.**

➤ The nation is the **largest provider of generic medicines** globally, occupying a **20% share in global supply by volume**, and is the **leading vaccine manufacturer** globally.

➤ India is **home to more than 3,000 pharma companies** with a strong network of over 10,500 manufacturing facilities as well as a highly skilled resource pool.

Note:

➤ Previously in 2022, the **World Health Organisation (WHO)** had issued an alert about four **Indian-manufactured cough syrups**, which are said to be linked to acute kidney injury in children and 66 deaths in the small West African nation of The Gambia.

Drugs Controller General of India (DCGI)

➤ The **Drugs Controller General of India (DCGI) is the head of the Central Drugs Standard Control Organization (CDSCO)** under the Ministry of Health and Family Welfare.

○ The **CDSCO is responsible for approving licenses for specified categories of drugs,** such as blood and blood products, IV fluids, vaccines, and sera in India.

➤ The DCGI is also responsible for setting standards for manufacturing, sales, import, and distribution of drugs and medical devices in India, as well as ensuring uniformity in the enforcement of the **Drugs and Cosmetics Act,1940.**

➤ In addition to these responsibilities, the **DCGI acts as an appellate authority in case of disputes regarding the quality of drugs and prepares and maintains the national reference standard for drugs.** Furthermore, DCGI is the **central licensing authority** for medical devices that fall under the **Medical Device Rules 2017**.

Seed Bank at Asola Bhatti Sanctuary

Why in News?

A 'seed bank for native plant species found in the **Aravallis region** is gradually taking shape at a nursery at the **Asola Bhatti Wildlife Sanctuary**, after a few years of efforts at collecting seeds from across Delhi and other states.

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What is the Project?

➢ **About:**
- ○ The project, which started in 2015, is being implemented jointly by the Forest Department and the **Bombay Natural History Society** (BNHS).
- ○ The nursery at Asola Bhatti Wildlife Sanctuary is growing more than 100 species of native grasses, plants, and trees, and provides saplings for plantation by agencies in the city.

➢ **Aim:**
- ○ The aim of the seed bank is **to supply native saplings for the city** and reintroduce species that have become rare or hard to locate.
- ○ The seed bank also **aims to create awareness around the trees that are disappearing in Delhi**, have these trees available for people to be able to grow them, and map where they are.
- ○ The plan is **to raise production to around 10 lakh saplings every year**.

What is Seed Bank?

➢ **About:**
- ○ Seed banks are **important repositories of plant genetic resources.**
- ○ They store seeds of different plant varieties, which are conserved to maintain their genetic diversity and to preserve their ability to adapt to changing environmental conditions.
- ○ Seed banks also serve as **important resources for research, agriculture, and conservation.**

➢ **India's Seed Bank:**
- ○ India has established its own seed storage facility at **Chang La in Ladakh, Jammu and Kashmir.**
  - It has been built jointly by the Defence Institute of High-Altitude Research (DIHAR) and the National Bureau of Plant Genetic Resources (NBPGR) in 2010 under the aegis of Defence Research and Development Organisation (DRDO).
  - It stores over 5,000 seed accessions (one accession consists of a set of seeds of a particular species collected from different geographical and demographic locations).

➢ **World's Largest Seed Vault:**
- ○ **Svalbard Global Seed Vault or Doomsday Vault** is the world's largest seed storage facility situated at Norway.

Asola-Bhatti Wildlife Sanctuary

➢ Asola-Bhatti Wildlife Sanctuary covering 32.71 sq. km area on the Southern Delhi Ridge of Aravalli hill range on Delhi-Haryana border lies in Southern Delhi as well as northern parts of Faridabad and Gurugram districts of Haryana state.

➢ It is also part of the Sariska-Delhi Wildlife Corridor, which runs from the Sariska Tiger Reserve in Rajasthan to Delhi Ridge.

■■■

Note:

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Rapid Fire Current Affairs

Highlights

- GI Tag for Cumbum Grapes
- Quality Control Orders
- Jallianwala Bagh Massacre
- Assam's Bihu Dance Sets Two Guinness World Records
- IAF Joins Multinational Exercise Orion in France
- Management Effectiveness Evaluation (MEE) 2022
- National Party
- Guru Tegh Bahadur Parkash Purab
- Mahatma Jyotiba Phule
- Unified Licensing Portal
- 3D Printing
- Tamil Nadu Assembly Urges Time Frame for Approval of Bills
- Waste-to-Energy Plant
- 125th Anniversary of Ramakrishna Math
- Short-Beaked Echidnas Strategy to Beat the Heat
- 'Ex KAVACH'
- Rare-Earth elements in Andhra Pradesh
- President Murmu's Maiden Sortie in Sukhoi-30 MKI
- Babu Jagjivan Ram
- Sagar Setu App

- UN Statistical Commission
- Olive Crown Awards
- India achieves 100% Rice Fortification target
- Konda Reddi Tribe
- Thira Dance
- SLINEX-23 India- Sri Lanka Naval Maritime Exercise
- India Probes Anti-Dumping of Sodium Cyanide Imports
- Combined Commanders Conference
- PM SVANidhi
- Autism Awareness Day
- India-Bangladesh Friendship Pipeline
- Cope India Exercise
- Metropolitan Museum of Art Returns Trafficked Indian Sculptures
- Indian Partition Refugee Assistance Scheme
- Hue and Cry
- OBCs & The Current Conflict
- Rhino Poaching Cases in Assam
- India's First
- Cloned Female Calf
- AFINDEX-2023

GI Tag for Cumbum Grapes

Tamil Nadu's famous Cumbum Panneer Thratchai, also known as Cumbum grapes **recently earned the Geographical Indication (GI) tag**.

The **Cumbum Valley located at the Western Ghats in Tamil Nadu is known as the 'Grapes City of South India'** and cultivates the Panneer Thratchai. This variety, **also known as Muscat Hamburg, is popular for its quick growth and early maturity,** ensuring that the crop is available in the market almost throughout the year.

The **Panneer grapes were first introduced in Tamil Nadu by a French priest in 1832** and are rich in vitamins, tartaric acid and antioxidants and **reduce the risk of some chronic diseases**. They are also known for a **superior taste apart from the purplish brown-colour**.

A GI is a **sign used on products that have a specific geographical origin** and possess qualities or a reputation that are due to that origin. The **Geographical Indications of Goods (Registration and Protection) Act, 1999** seeks to **provide for the registration and better protection**

Note:

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of geographical indications relating to goods in India. It is governed and directed by the **WTO** Agreement on **TRIPS**.

Read More: GI Tag

Quality Control Orders

Recently, **the Ministry of Textiles announced two Quality Control Orders (QCOs) for 31 items**, comprising geo-textiles and protective textiles, following the due process of notification of technical regulations. As per the Ministry, **these orders mark the first technical regulation from India for the technical textiles industry**.

Geo-textiles are **used for infrastructure projects and environmental applications** while protective textiles are **used to protect human life from hazardous and adverse working conditions**.

QCOs will **ensure the standard and quality of Technical Textiles** and **encourage the growth of this industry** in India in producing quality products at competitive pricing.

The QCOs will **come into force 180 days after the date of its publication in the Official Gazette**. The conformity assessment requirements specified in these QCOs are **equally applicable to domestic manufacturers as well as foreign manufacturers** who intend to export their products to India.

Read More: National Technical Textiles Mission (NTTM), India's Textile Sector Graphene and Magnetoresistance
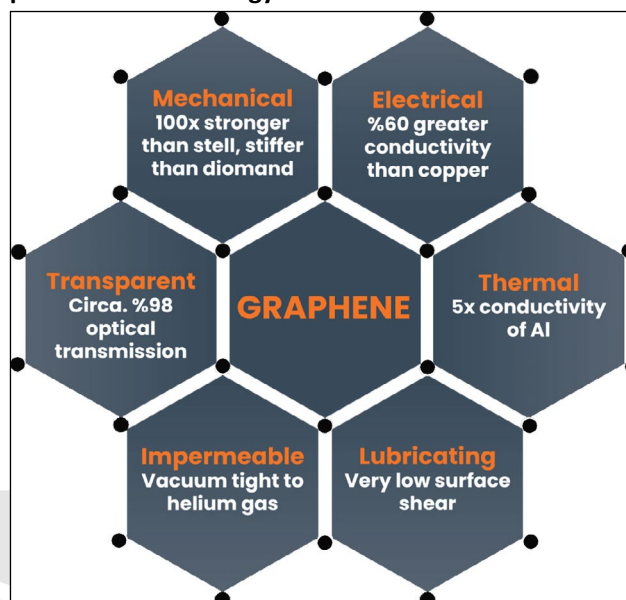
Another **property of graphene has been discovered** by UK researchers. At room temperature, **it exhibits an anomalous giant magnetoresistance (GMR)**.

The GMR phenomenon **occurs when adjacent magnetic fields influence the electrical resistance of a conductor**. It is used in hard disk drives and magnetoresistive RAM in computers, biosensors, automotive sensors, microelectromechanical systems, and medical imagers. GMR-based devices are **particularly used to sense magnetic fields.**

The new study has **found that Graphene-based devices do not require very low temperatures in order to sense these fields**, in contrast to their **conventional ferromagnetic counterparts.**

Graphene is a **one-atom-thick layer of carbon atoms arranged in a hexagonal lattice**. It is the building-block of Graphite. It is the **thinnest, most electrically and thermally conductive material in the world**, while also being flexible, transparent and incredibly strong. Graphene is also known as a **wonder material** due to its **vast potential in the energy and medical world.**

Mechanical 100x stronger than stell, stiffer than diomand

Electrical %60 greater conductivity than copper

Transparent Circa. %98 optical transmission

GRAPHENE

Thermal 5x conductivity of Al

Impermeable Vacuum tight to helium gas

Lubricating Very low surface shear

Read More: India's First Graphene Innovation Centre

Jallianwala Bagh Massacre

Jallianwala Bagh Massacre Day 2023 marks 104 years since the tragic incident that is seen as a turning point in Indian history. The Jallianwala Bagh massacre was a tragic incident that occurred on 13th April 1919 in Amritsar, India, where British Gurkha soldiers, on the orders of **Brigadier-General Dyer, fired upon a large crowd of unarmed protestors who had gathered at Jallianwala Bagh to demonstrate against the Rowlatt Act 1919 peacefully**. The event resulted in the death of over 1000 innocent men, women, and children and sparked widespread protests and unrest throughout the country.

The incident was a **significant turning point in India's struggle for independence from British rule** and galvanized the Indian people to unite and fight for their rights and freedom. The massacre led to widespread condemnation of British colonial policies, and it played a pivotal role in shaping the **Indian independence movement**. The incident also marked a significant turning point in **Mahatma Gandhi's life as it led him to launch his first major nonviolent civil disobedience campaign, the Non-Cooperation Movement,** which ultimately paved the way for India's independence in 1947. Today, Jallianwala Bagh serves as a powerful reminder of the sacrifices made by

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countless Indians in the fight for independence, and it continues to inspire people around the world to fight against oppression and injustice.

Read more: Jallianwala Bagh Massacre

Assam's Bihu Dance Sets Two Guinness World Records

Assam's Bihu dance has made history by breaking two world records with 11,304 dancers and musicians performing at Sarusajai Stadium in Guwahati. **The performers attempted to create world records in two categories - the largest Bihu dance performance and the largest performance by folk musicians.** This marks a significant moment for the traditional **folk dance of Bihu, which is popular across Assam** and especially performed during **Bohag Bihu or Rongali Bihu, the spring festival that heralds the Assamese New Year in mid-April.**

The President of India has extended greetings on the occasion of various Traditional New Year Festivals celebrated across India, including **Vaishakhi, Vishu (Kerala and other neighboring areas), Naba Barsha (West Bengal), Puthandu-Pirappu (Tamil Nadu), and Vaisakhadi.** These festivals, **observed during the spring season**, signify the **beginning of the new year according to different regional calendars in India.** Vaishakhi is celebrated by Hindus and Sikhs and marks the formation of **the Khalsa panth of warriors under Guru Gobind Singh.** These festivals bring together people from various castes and religions across India and celebrate the rich cultural diversity of the country.

Read more: RONGALI BIHU, TRADITIONAL NEW YEAR FESTIVALS

IAF Joins Multinational Exercise Orion in France

The **Indian Air Force (IAF)** will be sending a contingent France to participate in **Exercise Orion at Mont-de-Marsan, an Air Force base of the French Air and Space Force (FASF).** from 17th April to 5th May 2023. This exercise would mark the **first overseas participation for the IAF's Rafale aircraft.** In addition to the IAF and FASF, Air Forces from Germany, Greece, Italy, Netherlands, the United Kingdom, Spain, and the United States of America will also take part in this **multilateral exercise**. This exercise will **enable the IAF to learn the best practices of other Air Forces and enhance their employment philosophy, further enriching their capabilities.**

GI Tag for Madhya Pradesh's Gond Painting

Madhya Pradesh's traditional Gond painting has been awarded the Geographical Indication (GI) tag, a recognition that will help protect the art form and the artists who create it. The paintings, which are **created by the Gond tribe, depict nature, animals, and religious themes, and showcase their way of life.** The **Dindori district is the main source of Gond painting**, and it has expanded to other places in the area.

The **promotion of Gond painting through the National Rural Livelihood Mission(NRLM) and National Urban Livelihood Mission (NULM)** also will bring the art form to a wider audience through greeting cards, mobile covers, and bag covers.

Cellular Agriculture

Cellular agriculture is a relatively new concept that offers a sustainable and ethical alternative to traditional

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animal agriculture. It involves **growing animal-based products, such as meat, dairy, and seafood, from cell cultures rather than directly from animals.** This technology comprises **two different approaches, namely cell cultivation and precision fermentation**. In the **cell-cultivation method, stem cells are initially sampled from animals** through a painless process and then **fed with nutrients in large containers** where they **multiply and differentiate into muscle tissue, which is the main component of meat.** On the other hand, the **precision-fermentation method uses microorganisms, such as yeast,** to produce products such as milk and egg-white proteins. These products can be grown directly from microorganisms in a similar fermentation process to that which has been used for many years in the food industry to produce enzymes and other products.

One of the main advantages of cellular agriculture is its potential to **address the environmental and ethical issues associated with traditional animal agriculture.** It requires fewer resources, such as land, water, and feed, and produces fewer greenhouse gas emissions and waste. Additionally, the raising and slaughtering of animals can be avoided, which can significantly improve animal welfare.

US-Philippines Joint Military Exercises

Recently, t**he US and the Philippines have launched their annual "Balikatan" military exercises,** and aimed at improving the respective militaries' ability to **respond jointly to threats in the Indo-Pacific.** The exercises were first staged in 1991. **Balikatan means "shoulder-to-shoulder".** The Philippines' foreign policy is moving towards the US and away from its previous China-friendly stance.

Overall, the joint military exercises reflect the Philippines' efforts to increase its military capabilities and defend against China's assertiveness in the region.

Read more: Indo- Pacific

Management Effectiveness Evaluation (MEE) 2022

According to the **National Tiger Conservation Authority's (NTCA)** fifth cycle of **Management Effectiveness Evaluation (MEE)** for 2022, **the Periyar Tiger Reserve (PTR) ranked first**, **Satpura** and **Bandipur** came **second,** while **Nagarhole was ranked third** (92.42%) in the 2022 cycle of MEE.

And all five reserves in Tamil Nadu are managed well, the **Anamalai Tiger Reserve (ATR) and the Mudumalai Tiger Reserve (MTR) are ranked fifth and eighth** among the 51 tiger reserves in the country and have improved their ranking from "very good" to "excellent." These two tiger reserves are among the 12 tiger reserves that have been classified as "excellent." The **Sathyamangalam Tiger Reserve (STR)** and the **Kalakkad and Mundanthurai Tiger Reserve (KMTR) retained their "very good"**. The newly declared tiger reserve, **Srivilliputhur-Megamalai, was ranked "good"**.

The MEE evaluation was based on the **International Union for Conservation of Nature's (IUCN) framework** and covered six assessment elements, including context, planning, input, process, output, and outcomes.

Read more: Mudumalai Tiger Reserve , Periyar Tiger Reserve (PTR)

National Party

The **Election Commission of India** has recognized the **Aam Aadmi Party (AAP) as a national party**. The decision was made based on a **review of the parties' poll performances, including the 2014 and 2019 Lok Sabha polls and 21 state assembly polls since 2014**. With this recognition, AAP joins the Bharatiya Janata Party (BJP)**,** Indian National Congress (INC), Bahujan Samaj Party (BSP), CPI(M), and National People's Party (NPP) **as the sixth national party** in the country. This status ensures that the **party's symbol is reserved for its candidates across the country**, and it gets **land for an office in the national capital.**

In contrast, the **Trinamool Congress (TMC), Nationalist Congress Party (NCP), and Communist Party of India (CPI) have lost their national party status.** The EC's decision was based on the criteria stipulated in the **Election Symbols (Reservation and Allotment) Order, of 1968**. Among other conditions, **a national party must get at least a 6% vote share in four or more states** in the last Lok Sabha or Assembly elections and have at **least four MPs in Lok Sabha**. In its review, the EC found that the TMC did not contest the 2019 Lok Sabha elections from Arunachal Pradesh and Manipur, while the NCP lost its state party status in Goa, Manipur, and Meghalaya. The CPI had its status as a state party withdrawn in West Bengal and Odisha.

Read more: National and State Parties

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Guru Tegh Bahadur Parkash Purab

Guru Tegh Bahadur Parkash Purab 2023 is celebrated to mark the birth of the Ninth Guru of Sikhism, Guru Tegh Bahadur, and to remember his life and teachings. This year it is being observed on April 11, 2023. Tegh Bahadur was born on the 21st of April 1621 in Amritsar. He was raised under the guidance of his father, Guru Hargobind, who was known for raising an army against the Mughals and promoting the concept of warrior saints. Tegh Bahadur's contribution to **Sikhism** is immense. **His poetic hymns are housed in the sacred text of Sikhism, 'Guru Granth Sahib.'** He founded the town of **Chak-Nanki in Punjab during one of his missions, which later became a part of Punjab's Anandpur Sahib.**

Unfortunately, Guru Tegh Bahadur was executed in Delhi in 1675 under the orders of the **Mughal Emperor Aurangzeb**. He is remembered as a saint and martyr who sacrificed his life to uphold the principles of freedom of religion and justice.

Read more: Guru Tegh Bahadur, Sikhism

Mahatma Jyotiba Phule

The Prime Minister has paid tribute to the great social reformer, philosopher, and writer **Mahatma Jyotirao Phule** on his birth anniversary. **Jyotirao Phule was born on 11th April 1827 in Maharashtra, India.** He belonged to the **Mali caste of gardeners and vegetable farmers**. Phule was greatly influenced by Thomas Paine's book **'The Rights of Man',** which **led him to advocate for liberty, egalitarianism, and socialism**. He believed in the **enlightenment of women and lower-caste members as the only solution to combat social evils**. Phule was a prolific writer, and his major publications include **'Tritiya Ratna,' 'Gulamgiri,' and 'Shetkarayacha Aasud.'**

Phule established the Satyashodhak Samaj in 1873, which meant 'Seekers of Truth' and aimed to attain equal social and economic benefits for lower castes in Maharashtra. In 1848, Phule and his wife **Savitribai opened the first indigenously run school for girls in Pune**, where they both taught. Phule was a believer in **gender equality** and involved his wife in all his social reform activities. He established an ashram for young widows and became an advocate for the idea of Widow Remarriage. He worked towards **abolishing untouchability and the caste system in Maharashtra.** Phule's activism inspired the likes of **Dr. B.R. Ambedkar** and **Mahatma Gandhi**. He passed away on 28th November 1890, and his memorial is built in Phule Wada, Pune, Maharashtra. It is believed that **he was the first person to use the term 'Dalit' for the depiction of oppressed masses often placed outside the 'varna system'.**

Read more: Jyotirao Phule

Unified Licensing Portal

The **Central Bureau of Narcotics has launched a unified portal** aimed at **streamlining the licensing and authorization process for the pharma and chemical industry in India.** The portal has been developed with the goal of instilling **efficiency, transparency, and accountability** in the department's operations while boosting the economy for **"Aatma Nirbhar Bharat"** and ensuring the availability of essential narcotic drugs and medicines to patients and their families.

The portal will benefit drug exporters, importers, and manufacturers with easy and secure transactions, simplified processes, and contactless operations. The portal is designed to be integrated with other government services, including **Bharat Kosh, GST, PAN-NSDL validation, e-Sanchit, and UIDAI, providing single-point services for obtaining licenses from the Central Bureau of Narcotics.** The portal is an effective tool for striking a balance between the availability of these substances for medicinal, scientific, and industrial use while ensuring compliance with the law and preventing their diversion for illicit use.

Central Bureau of Narcotics is a central government organization **dealing with the international trade of Narcotic Drugs, Psychotropic Substances**, and **Precursor Chemicals** under the ambit of various United Nations Conventions and the provisions of **NDPS Act, 1985.**

Read more: Narcotics Control Bureau

3D Printing

Bengaluru's Ulsoor Bazaar post office is set to become home to **India's first post office built using 3D printing technology**. Three-dimensional printing, also known as **additive manufacturing**, is a revolutionary technology that is being increasingly used in the construction industry. **With 3D printing, it is possible to create complex, customized, and intricate designs** using **computer-aided design (CAD) software.**

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This technology can be used to create parts, structures, and even entire buildings. One of the main advantages of 3D printing in construction is the **ability to reduce construction time and costs**. By eliminating the need for extensive **formwork (Mold used to form concrete into structural shapes), scaffolding, and labor,** the construction process can be streamlined, and significant savings can be achieved. Moreover, 3D printing allows for the creation of **lighter and more durable structures** that are also more **environmentally friendly.** Despite its many advantages, there are still some challenges associated with 3D printing in construction. **One of the main challenges is the limited size of the printers, which makes it difficult to construct larger buildings.** Additionally, the materials used for 3D printing are still limited, which limits the variety of structures that can be created.

Read more: National Strategy for Additive Manufacturing Policy

Tamil Nadu Assembly Urges Time Frame for Approval of Bills

The **Tamil Nadu assembly has passed a resolution urging the central government and President to establish a timeframe for governors to give their assent to bills** adopted by the House. The resolution was passed **following Governor remarks that bills that are withheld should be considered "dead".**

According to the Constitution, the governor cannot reject a bill sent by the assembly. **He can return a bill to the government** with his objections or observations and if the assembly clears it for a second time, **he can either give his consent or forward the bill for the President's consideration**. And **he can withhold the bill,** withholding has been defined by the Supreme Court as the bill falls through, and **the bill is dead.** When the bill is 'withhold', the bill is dead. However, the Constitution does not provide a timeframe for the governor to approve bills.

Read more: Governor's Power to Decide on Bills: Veto Power

Waste-to-Energy Plant

The Bowenpally Vegetable Market in Hyderabad has implemented an innovative waste management system. The market collects nearly 10 tons of waste every day, which is now converted into bioelectricity, biogas, and bio-manure through a waste-to-energy plant. The unsold and rotten vegetables are shredded and crushed into pulp, which undergoes **anaerobic digesters to produce biogas**. The biogas is collected and stored in balloons and used for cooking and powering the market facilities through a biogas generator. **Bio-manure is also produced as a by-product of the process**. The waste generated, which previously ended up in landfills, is now used to generate approximately 500 units of electricity and 30 kg of biofuel per day.

The waste-to-energy plant also generates **employment for women by providing opportunities for them to work in various roles**. The plant is funded by the **Department of Biotechnology and Department of Agriculture Marketing Telangana** is set up under the guidance and patented technology of **CSIR-IICT**. The waste-to-energy plant is not only an innovative solution to the waste management problem but also a significant step towards **sustainable development.**

Read more: Wate to Energy

125th Anniversary of Ramakrishna Math

The Indian Prime Minister recently visited the Vivekananda House in Chennai, as part of the **125th-anniversary celebration of the Ramakrishna Math** institution's service in Chennai.

Ramakrishna Math is a worldwide, **non-political, non-sectarian spiritual organization** that has been engaged in various forms of **humanitarian and social service activities for more than a century**. Inspired by the ideals of **renunciation and service**.

Math serves millions of men, women, and children, without any distinction of caste, religion, or race, because they see the living God in them. The organizations were brought into existence by **Sri Ramakrishna (1836-1886)**, the great 19th-century saint from **Bengal who is regarded as the Prophet of the Modern Age,** is a who **sought religious salvation** in the traditional ways of renunciation, meditation, and devotion. He was a saintly person who recognized the fundamental oneness of all religions and emphasized that there were many roads to God and salvation and the service of man is the service of God.

The teaching of Ramakrishna Paramhansa formed the basis of the **Ramakrishna Movement** and Sri

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Ramakrishna's chief disciple, **Swami Vivekananda (1863-1902)**, one of the foremost thinkers and religious leaders of the present age, who is regarded as **'one of the main molders of the modern world'.**

Read more: **Ramakrishna Mission's Awakening Programme**

Short-Beaked Echidnas Strategy to Beat the Heat

Short-beaked echidnas living in the **Dryandra Woodland in Western Australia** use a unique method to beat the searing heat during the summer. Since **they cannot pant** (breathe with short, quick breaths, typically from exertion or excitement) **like dogs** or **sweat like humans**, they **use their quills to regulate their body temperature**.

By slicking back their two-inch-long spines, they **trap warmth,** while raising them allows heat to escape. Another strategy is to **rest inside hollow logs,** where the **air temperature can exceed 40°C**.

However, researchers found that **blowing snot bubbles can help the echidnas cool down.** Their **snouts are covered in electroreceptors** that detect underground prey but only work when moist. When the animal blows **mucus balloons** that burst over its nose, **evaporation cools the blood vessels inside the snout,** reducing the body temperature.

Echidnas are the egg-laying mammal *(Monotremes).*

Read more: **Short-beaked echidnas**

'Ex KAVACH'

The **Andaman and Nicobar Command (ANC)** recently concluded a two-month-long joint **military exercise named** **'Ex KAVACH**.' The exercise involved the assets of the **Army, Navy, Air Force, and Coast Guard** and aimed at fine-tuning joint warfare capabilities and enhancing interoperability and operational synergy between the forces.

It involved **amphibious landing, air-landed operations, heliborne operations, and rapid insertion of the Special Forces on a remote Island** of the Andaman and Nicobar Islands.

Read more: **Ex KAVACH, Andaman and Nicobar Command (ANC)**

Rare-Earth elements in Andhra Pradesh

Scientists at the **National Geophysical Research Institute (NGRI)** have found **rare-earth elements (REEs)** in **Anantapur district, Andhra Pradesh**.

REEs consist of a group of **17 chemical elements,** including the **15 lanthanides:** lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), promethium (Pm), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), lutetium (Lu), and two additional elements: scandium (Sc) and yttrium (Y).

They are particularly important for making **permanent magnets used in modern electronic devices** such as **smartphones, computers, and jet aircraft.**

Read more: **Rare-earth elements (REEs**

President Murmu's Maiden Sortie in Sukhoi-30 MKI

President Droupadi Murmu recently went on a 30-minute flight in a **Sukhoi-30 MKI** fighter aircraft from **Tezpur Air Force Station in Assam**. She is the **third president and second woman president** (first- Former President Pratibha Patil) to fly such a sortie.

Tezpur Air Force Station is a vital IAF airbase near China, it has **fighter squadrons, a helicopter unit** and **radar** and **missile** squadrons.

The President's sortie in the Sukhoi 30 MKI fighter aircraft is a part of engagement with the armed forces as the **Supreme Commander of Indian Armed Forces.**

The Sukhoi-30 MKI is a **multirole combat aircraft developed by Russia's Sukhoi** and licensed produced by **India's Hindustan Aeronautics Limited (HAL).** It is one

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of the most advanced fighter jets in the Indian Air Force (IAF) and is used for **air superiority, air-to-ground attack, and air-to-air refueling missions.**

Read more: **Sukhoi-30 MKI, Supreme Commander of Indian Armed Forces.**

Babu Jagjivan Ram

The Prime Minister **paid tributes to freedom fighter Babu Jagjivan Ram on his birth anniversary.** He was **popularly known as Babuji,** a national leader, a freedom fighter, a crusader of social justice, a champion of depressed classes and an outstanding Parliamentarian.

He was **born on 5th April 1908 in Chandwa in Bihar to a Dalit family.** In 1931, he became a **member of the Indian National Congress (INC)**. In 1935, he proposed at a session of the Hindu Mahasabha that drinking water wells and temples be open to untouchables. In 1935, he also appeared before the Hammond Commission at Ranchi and **demanded, for the first time, voting rights for the Dalits.** When Jawaharlal Nehru formed the provisional government, **Jagjivan Ram became its youngest minister.**

He died on 6th July 1986 in New Delhi. **His memorial at his cremation place is named Samta Sthal (Place of Equality).**

Read More: Babu Jagjivan Ram

Sagar Setu App

The Union Minister for Ports, Shipping and Waterways recently **launched the App Version of National Logistics Portal (Marine) - 'Sagar-Setu'.**

The mobile app **will ensure data mobility such that approvals & monitoring shall be at the fingertips** of port & ministry officials and stakeholders as well.

National Logistics Portal (Marine) **is a national maritime single window platform encompassing complete end-to-end logistics solutions** to help exporters, importers, and service providers exchange documents seamlessly and transact business. The overarching NLP Marine Vision **is to cater to various stakeholders in Government to Government (G2G), Government to Business (G2B) and Business-to-business (B2B) model.**

GI Tag for Kathua's 'Basohli Painting'

The **world-famous 'Basohli Painting', popular for its miniature art style** from Kathua district, Jammu & Kashmir has obtained the Geographical Indication (GI) tag. **This is the first time that the Jammu region got a GI tag for handicrafts.**

The **process for GI-tagging of nine products was initiated by the** National Bank for Agriculture and Rural Development (NABARD in consultation with the Department of Handicrafts and Handloom (J&K) in December 2020.

The products from UT of J&K **have been included in the list of 33 products that have received the GI tag recently.**

Read More: Geographical Indication (GI) Tag

UN Statistical Commission

India **has been elected to the UN Statistical Commission for a four-year period** (beginning on 1 January 2024) in a competitive election. The Commission works under the United Nations Economic and Social Council (ECOSOC).

The UN Statistical Commission, **established in 1947, is the highest body of the global statistical system**

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bringing together the Chief Statisticians from member states from around the world. **It is the highest decision-making body for international statistical activities**, responsible for setting statistical standards and the development of concepts and methods, including their implementation at the national and international levels.

The **Commission consists of 24 member countries** (Five members are from African States, four from Asia-Pacific States, four from Eastern European States, four from Latin American and Caribbean States and seven members from Western European and other States) **of the United Nations elected by the ECOSOC on the basis of equitable geographical distribution**. India has been elected to the Economic and Social Council, one of the six main organs of the United Nations, for the 2022-24 term.

Read More: United Nations Economic and Social Council (ECOSOC)

Olive Crown Awards

The **13th edition of the Olive Crown Awards was held in Mumbai, India**, to commend individuals and corporates that **promoted sustainability or 'green advertising'**. This award is awarded by the **International Advertising Association.** The **awards featured 17 categories, including 'Green Agency of the Year' and 'Green Campaign of the Year'.** Notable winners included **P. N. Mohan, who won the coveted 'Green Crusader of the Year** award for his commitment to **restoring seven lakes near Chennai. Kirloskar Limitless received the gold award in the 'Corporate Crusader of the Year' category for their work on 'A Minute for Nature'**. Famous Innovations won 10 awards across categories, while **Chirag Rural Development Foundation and People for Animals Wildlife Rescue and Conservation Centre were awarded the gold prize in the 'Green NGO of the Year' category.**

India achieves 100% Rice Fortification target

As part of the Rice Fortification Program, 269 districts in 27 states in India have achieved a **100% target for Phase II by March 2023** in the distribution of **fortified rice under the Targeted Public Distribution System (TPDS).** This program **aims to supply fortified rice in every Social Safety Net Scheme of the Centre throughout the country by 2024 in a phased manner.** During Phase II of the Rice Fortification Programme, 105 Lakh Metric Tonnes of fortified rice was lifted and distributed to 27 states/union territories under the TPDS, while about 29 LMT was lifted by states/UTs under **Integrated Child Development Services and PM POSHAN.** In total, about 134 LMT of fortified rice was lifted in 2022-23. The department is now preparing for Phase III to complete the coverage of all remaining districts, except for those that consume wheat, before the targeted date of March 2024.

Fortification is the **process of enhancing the nutritional value of staple foods** like rice, by **adding important vitamins and minerals including iron, iodine, zinc, Vitamin A & D.** Before processing, these nutrients may or may not have been present in the food.

Read more: Public Distribution System (TPDS)

Konda Reddi Tribe

The Polavaram-Konda Reddi clan is experiencing cultural shock as the **Godavari river** does not flow through their new settlements**.** Pochavaram village is scheduled to undergo rehabilitation as part of the **Polavaram irrigation project's Resettlement and Rehabilitation (R&R)**. The **Konda Reddis, classified as a Particularly Vulnerable Tribal Group (PVTG) in Andhra Pradesh**, They inhabit on both the banks of the Godavari River (East and West Godavari districts), in the hilly forest region of Khammam (Telangana) and Srikakulam (Andhra Pradesh). They live in the **interior forest areas largely cut off from the mainstream.** Traditionally, they were **shifting cultivators** and recently, some of them have adopted **settled agriculture and horticulture**. Collection of non-timber forest products and basket-making supplement the sources of their livelihood.

Read more: Konda Reddi Tribe

Thira Dance

Thirra, also known as **Theyyam thira**, is a ritual dance performed in the groves and temples of the **Malabar region in Kerala, India**. This art form is **performed by the artists of the Malaya community, known as "perumalayans."** It is usually performed during the annual temple festival known as Utsavam. Clan deities such as **Bhagavathi and Shiva are worshipped in these forms.**

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Thira is a sub-division of Theyyam and is similar to the Theyyam dance, except that in Thira, the **performer is considered to be possessed by the god rather than representing the god**. The **objective of Thira is to bring the gods to life. Toddy, an alcoholic drink, plays a significant role in the proceedings as an offering to the gods,** and almost all the performers dance under its influence, which helps create the feeling of being "possessed." The performers belong to the **Peruvannan caste, who are given prime importance in Thira.** Both upper caste Brahmins and lower caste tribals have an important place in worship in Kerala.

SLINEX-23 India- Sri Lanka Naval Maritime Exercise

The Indian and Sri Lankan Navies are set to participate in the **10th edition of the bilateral maritime exercise SLINEX-23**, which will take place in Colombo from April 3 to April 8, 2023. The exercise will be conducted in two phases - the **Harbour Phase** and the **Sea Phase**. The previous edition of **SLINEX has conducted in Visakhapatnam in March 2022**. The **Indian Navy** will be represented by two vessels, **the INS Kiltan and INS Savitri,** while the Sri Lankan Navy will be represented by two vessels, **the SLNS Gajabahu, and SLNS Sagara.** In addition, both sides will deploy **Maritime Patrol Aircraft, helicopters, and Special Forces for the exercise.**

SLINEX-23 aims to enhance interoperability, improve mutual understanding, and exchange best practices between the two navies. The other military exercise between India and Sri Lanka is '**Mitra Shakti**.

Read more: INDIA SRI LANKA RELATIONS

India Probes Anti-Dumping of Sodium Cyanide Imports

India has initiated an anti-dumping probe into imports of sodium cyanide from China, the European Union, Japan, and Korea following a complaint by domestic players. Sodium cyanide is **white crystalline or granular powder.** It **releases hydrogen cyanide gas, a highly toxic chemical asphyxiant** that interferes with the body's ability to use oxygen. Exposure to sodium cyanide can be rapidly fatal. It is **used for extraction of gold and silver from their respective ores**, **manufacturing insecticides, dyes, pigments, and bulk drugs.** The move by the **Directorate General of Trade Remedies (DGTR)** comes after an application for the probe and the imposition of appropriate anti-dumping duty on the imports from these nations. The DGTR said the applicants have alleged that material injury is being caused to the domestic industry due to the alleged dumped imports.

Anti-dumping duties are conducted by countries to **determine whether domestic industries have been hurt because of a surge in cheap imports**. As a countermeasure, they impose these duties under the multilateral regime of Geneva-based **World Trade Organization (WTO)**. The duty is aimed at **ensuring fair trading practices and creating a level-playing field for domestic producer's vis-a-vis foreign producers and exporters.** India has already imposed anti-dumping duty on several products to tackle cheap imports from various countries, including China.

Read more: Anti-Dumping Duty

Combined Commanders Conference

Recently, The **Prime Minister of India, participated in the Combined Commanders' Conference** in Bhopal, Madhya Pradesh for three days. **The theme of the conference was 'Ready, Resurgent, Relevant'**. The Military Commanders **discussed a wide range of issues related to national security, including jointness and theaterisation in the Armed Forces.** Theaterisation is the practice of dividing military forces into operational commands or theaters, each with a distinct geographic area of responsibility the preparedness of the Armed Forces and the progress in the defense ecosystem towards achieving **'AtmaNirbharta' (self-reliance)** was also reviewed.

Read more: Unified Commanders Conference.

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PM SVANidhi

The **Ministry of Housing and Urban Affairs** recently released data related to the **PM SVANidhi scheme,** **which aims to provide micro-credit support to street vendors to alleviate the pandemic-induced economic stress**. The data reveals that out of 42.7 lakh loans disbursed under the scheme, amounting to ₹5,152.37 crore, **only 9.3% were given to street vendors from minority communities.**

Additionally, the share of loans given to minority street vendors has declined steadily from 10.23% in 2020-21 to an all-time low of 7.76% in 2022-23. This is concerning given that minority street vendors make up a significant portion of the street vendor population due to various socio-economic reasons.

The disbursal of loans across states appears to be aligned with the population of each state, with **Uttar Pradesh disbursing the highest number of loans and Sikkim disbursing only one loan.** Uttar Pradesh also gave the highest number of loans to minority street vendors at 95,032.

Read more: PM SVANidhi: Micro Credit Scheme for Street Vendors

Autism Awareness Day

Autism, also known as an **autism spectrum disorder (ASD)**, a developmental disorder that affects a broad range of people, is typically **diagnosed in early childhood** and can impact individuals throughout their lives. Those with autism may experience **social difficulties and display repetitive behavior patterns or speech, as well as other behavioral issues**. And those with this condition may require different levels of care and support. To raise awareness of autism and promote acceptance and support for those affected by the condition, the **United Nations** established **World Autism Awareness Day** on April 2. The first World Autism Awareness Day was observed in 2008.

The **theme for World Autism Awareness Day 2023** is **"Contribution of Autistic Individuals at Home, at Work, in the Arts, and Policymaking."** The day serves as an opportunity to increase public understanding of autism and encourage individuals, communities, and organizations to take action to support people with autism. **Right of Persons with Disabilities Act, 2016 of India** deal with rights of people with **disabilities including autism.**

Read more: Autism Spectrum Disorder

India-Bangladesh Friendship Pipeline

The **India-Bangladesh Friendship Pipeline (IBFP)** was inaugurated by Prime Minister Shri Narendra Modi and Bangladesh Prime Minister Sheikh Hasina in a virtual mode. The pipeline, with a capacity **to transport 1 million Metric Ton Per Annum (MMTPA) of High-Speed Diesel (HSD) to Bangladesh**, is the second cross-border energy pipeline between India and its Neighbours. **While IBFP is the first cross-border energy pipeline between India and Bangladesh.** This pipeline will further strengthen their relationship, enhancing connectivity and people-to-people linkages between the two sides. And enhance ongoing energy cooperation between the two countries and will further growth in Bangladesh, especially in the agriculture sector.

Read more: India Bangladesh Relations

Cope India Exercise

The **Air Forces of India and the U.S. are set to conduct the Cope India exercise** from **April 10 to 21 at the Kalaikunda airbase in West Bengal,** with **Japan as an observer**. Cope India Exercise is a **bilateral combined training session involving the Indian Air Force (IAF) and the US Air Force (USAF).** Cope India started out as a fighter-training drill in 2004. The most recent iteration of the practice took place in 2019. The exercise has developed to include, in addition to fighter-training exercises, subject matter expert exchanges, air mobility training, airdrop training, and large-force exercises.

Other joint defense drills between India and the US include **Yudh-Abhyas** (Military Exercise), **Vajra Parhar,**

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and **Dharma Guardian** **with Japan.** And a Trilateral **Maritime Exercise Malabar** is scheduled between the **navies of India, Japan, and the USA.**

Read more: India - US Relations.

Metropolitan Museum of Art Returns Trafficked Indian Sculptures

The Metropolitan Museum of Art in New York has announced that it will return 15 Indian sculptures that were trafficked and sold. The works date from the **1st century BCE to the 11th century CE** and include **terracotta**, **copper**, **and stone artifacts such as a Celestial Dancer (Apsara)** valued at over $1 million and **a stone bust of Kamadeva, the God of Love from** the 8th century CE and **a Svetambara enthroned Jina.** from the 8th century CE. The **museum has also removed three Turkish pieces from its Greek and Roman galleries**.

The Metropolitan Museum of Art has **pledged to adhere to responsible purchase of antiquities and has implemented strict standards for new acquisitions and its existing collection**. Before Independence**,** the Antiquities (Export Control) Act was passed in 1947 to ensure that no antiquity could be exported without a license. **Antiquities in India are governed by the Antiquities and Art Treasures Act, 1972** which falls within the purview of the **Archaeological Survey of India** (ASI), Union Ministry of Culture.

Read more: Menace of Missing Antiquities in India.

Indian Partition Refugee Assistance Scheme

The **Central government scheme to provide financial assistance to over 5,000 Hindu and Sikh families who migrated to India from Pakistan's West Punjab after the 1947 partition** has faced several challenges. Out of 5,764 eligible families, only 903 families have received the grant so far, with several claims being unable to process due to the **lack of original documents such as refugee cards.** The scheme has also been **affected by corruption allegations and demands for bribes from revenue officials**. Additionally, the division of the grant amount among several members of the family has resulted in a low payout for some families.

The J&K administration conducted special camps to help families apply for the grant, but many have not been able to produce the required documents. **The Ministry of Home Affairs reimburses the funds to the J&K administration based on the verification of records done by them**, and the scheme has been extended till March 31, 2024, with ₹25 crore allotted for the scheme in the 2023-24 budget.

Read more: India and Refugee Policy

Hue and Cry

Recently, the Punjab government has issued a **"hue and cry notice"** against the fugitive pro-Khalistan preacher Amritpal Singh. **The phrase 'hue and cry' may be commonly associated with public outrage**, but its **origins lie in England's** 13th and 14th-century **policing system**. The **'Statute of Winchester' signed by King Edward I in 1285** mandated that anyone **who witnessed a crime not only had to report it but take up a cry to alert the police.**

The 'hue and cry' rule simply meant that **if a suspect or a criminal was running down the street in front of some bystanders, then each of them had to yell to help the police identify and catch them**. This community policing approach was successful in **small-knit communities,** and the practice has continued in some parts of the world, including India, where 'hue and cry notices' are still used to seek public assistance in cases such as locating missing persons or identifying suspects. These notices are governed by specific rules and procedures and are used sparingly to stress the seriousness of the matter and create panic among the public. While the term **'hue and cry' may have diminished in usage in contemporary times, it remains a legal procedure that must be followed to alert other states about fugitives.**

OBCs & The Current Conflict

A nationwide campaign is taking place against an MP **due to his remarks against the Other Backward Classes (OBCs)** following which he has also been **convicted of defamation and was disqualified from Parliament.**

The **Kalelkar Commission (1953)**, was the first to identify backward classes other than the SCs and STs at

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the national level. Based on the recommendation of the **Second Backward Classes Commission (Mandal Commission)**, the Government of India in August 1990 had notified **27% reservation for Socially and Educationally Backward Classes (SEBCs)** (or OBCs) in vacancies for civil posts and services that are to be filled on direct recruitment.

After this was challenged, the Supreme Court in November, 1992 **(Indira Sawhney case) upheld 27%**

reservation for OBCs, subject to exclusion of the creamy layer.

The **Justice Rohini committee** was constituted in 2017 to submit its report on Sub-categorisation of Other Backward Classes (OBCs). The committee is yet to submit its report.

Read More: Defamation Law and Disqualification of MPs, Indira Sawhney Judgment (1992)

Rhino Poaching Cases in Assam

After zero cases of **rhinoceros poaching were recorded in Assam** in 2022, **the first such case was reported recently**. In 2021, **the Assam Government constituted an Anti-Poaching Task Force**.

There are five species of rhino – white and black rhinos in Africa, and **the greater one-horned, Javan, and Sumatran** rhino species in Asia.

Only the Great One-Horned Rhino is found in India.

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Also known as the Indian rhino, **it is the largest of the rhino species**. It is identified by a single black horn and a grey-brown hide with skin folds. The species is **restricted to small habitats** in Indo-Nepal terai and northern West Bengal and Assam. **The Great One-Horned Rhino is listed as Vulnerable in IUCN Red List, mentioned in Appendix I in CITES and in Schedule I of the Wildlife Protection Act, 1972**.

Read More: Rhinos and Protect Areas in Assam, Infographic on Rhino

## India's First Cloned Female Calf

Due to the government push for increasing milk production, **the National Dairy Research Institute (NDRI),** Karnal, Haryana has produced the India's first cloned female calf of the desi breed Gir.

Under a project by NDRI, **the state will work on cloning of indigenous cow breeds such as Gir and Sahiwal**. Indigenous cattle breeds such as Gir, Sahiwal, Tharparkar, and Red-Sindhi, **play a pivotal role in milk production and the growth of the Indian dairy industry**.

Gir cattle are **also very popular and have been exported to Brazil, the United States, Mexico, and Venezuela** for the development of zebu cows.

The term cloning **describes a number of different processes that can be used to produce genetically identical copies of a biological entity**. The copied material, which has the same genetic makeup as the original, **is referred to as a clone**.
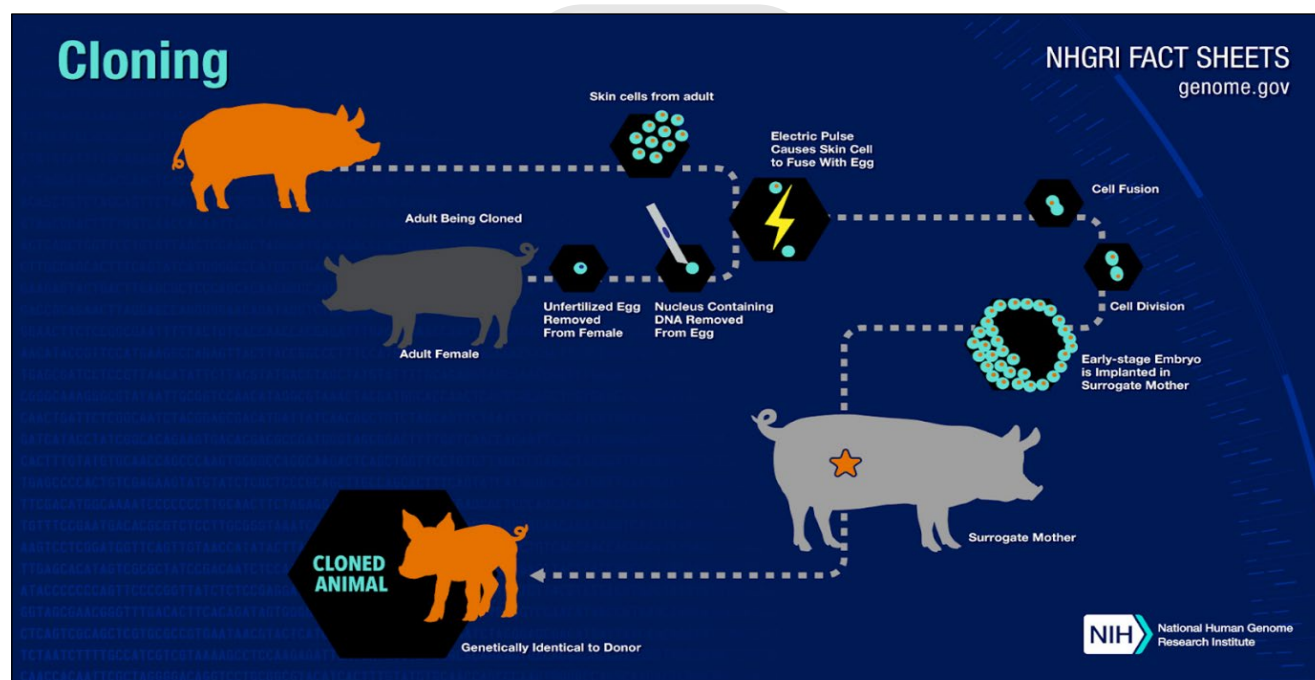
Read More: India's Dairy & Livestock Sector

AFINDEX-2023

The 2ⁿᵈ edition of the joint military exercise **"the Africa-India Field Training Exercise (AFINDEX-2023)"** concluded recently in Maharashtra. The **strategically significant India-Africa Army Chiefs Conclave was also hosted in Pune**.

The exercise was held from 16 to 29 Mar 2023. A total of 25 nations of the African continent with 124 participants and Indian **troops from the Sikh, Maratha and Mahar Regiments participated in the multinational exercise**.

The multinational military drill **was aimed at promoting the idea of Africa-India Militaries for Regional Unity (AMRUT)** and focused on incorporating the **current dynamics of UN Peacekeeping Forces (UNPKF)** through practical and comprehensive discussions and tactical exercises.

Read More: India-Africa Relations

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