



drishti

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Drishti, 641, First Floor, Dr. Mukherjee Nagar, Delhi-110009
Inquiry (English): 8010440440, Inquiry (Hindi): 8750187501
Email: help@groupdrishti.in

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Polity and Governance

Highlights

- Judicial Majoritarianism
- e-Courts Integrated Mission Mode Project
- No Bar on Contesting Two Seats in One Poll
- The Missing Deputy Speaker
- Custodial Death
- Expunging in Parliament
- Hate Crimes in India
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- Zero-Draft of Pandemic Treaty

Judicial Majoritarianism

Why in News?

Many people have raised concerns over Judicial Majoritarianism on the Judgement of the **Supreme Court** on **demonetization** and the minority judgment has been hailed for its challenge to the **RBI's (Reserve bank of India) institutional acquiescence** to the Central government.

What is Judicial Majoritarianism?

- Numerical majorities are of particular importance to cases **which involve a substantial interpretation of constitutional provisions.**
- The requirement for a **majority consensus flows from Article 145(5) of the Constitution** which states that no judgment in such cases can be delivered except with the concurrence of a majority. It also provides for judges to freely deliver dissenting judgments or opinions.
- In important cases, **Constitutional Benches**, consisting of five or more judges, are set up in **consonance with Article 145(3) of the Constitution.** Such Benches usually consist of five, seven, nine, 11 or even 13 judges.

What are the Concerns?

- **Denial of Merit:**
 - A meritorious minority decision, irrespective of the impeccability of its reasoning, **receives little weightage in terms of its outcomes.**

- An example is the dissenting opinion of Justice Subba Rao in the *Kharak Singh v. State of U.P. (1962)* case upholding the **Right To Privacy** which received the judicial stamp of approval in the *K.S. Puttaswamy v. UOI (2017)* case.

- The dissenting opinion of **Justice H.R. Khanna in A.D.M. Jabalpur v. Shivkant Shukla (1976)** upholding the **right to life** and personal liberty even during situations of **constitutional exceptionalism is a prime example.**

- It is argued that the **weightage given to numerical majorities** in judicial decisions by our Constitutional Courts is opposed to the merits in their reasoning.

➤ Obscure Situations:

- All judges on a particular Bench give their rulings on the same set of facts, laws, arguments and written submissions. In light of the same, any differences in judicial decisions **can be attributed to a difference in either the methodology adopted and the logic applied by the judges in their interpretation.**

- In such circumstances, it is entirely possible that the **majority may fall into either methodological fallacies and errors** or be limited by their 'judicial hunch' respectively.

➤ Question on Head Counting Procedure:

- A study also found that the rate of **dissent where the Chief Justice was a part of the Bench was lower** than in those cases where the Chief Justice was not on the Bench.

Note:

- Such situations call into **question the efficiency and desirability of head-counting procedures for a judicial determination** on questions of national and constitutional importance.

What can be the Solution?

- A system can be devised, which either gives **more weightage to the vote of senior judges** given that they have more experience or to the junior judges as they **may represent popular opinion better**. Such alternatives, however, can **only be explored once we identify and question the premises and rationales** which underlie head-counting in judicial decision-making.
- The absence of a critical discourse on judicial majoritarianism represents one of the **most fundamental gaps in our existing knowledge** regarding the functioning of our Supreme Court.
- As pending Constitutional Bench matters are listed for hearing and judgments are reserved, **we must reflect upon the arguments of judicial majoritarianism on the basis of which these cases are to be decided**.

e-Courts Integrated Mission Mode Project

Why in News?

The Government of India has **launched the e-Courts Integrated Mission Mode Project** in the country for computerization of District and subordinate courts **with the objective of improving access to justice using technology**.

What is e-Courts Integrated Mission Mode Project?

- **About & Implementation:**
 - As part of the **National e-Governance Plan**, the **project is under implementation since 2007 for Information and Communications Technology (ICT) development of the Indian Judiciary**
 - e-Courts project is being **implemented in association with e-Committee Supreme Court of India and the Department of Justice**.
- **Phases:**
 - **Phase I:** It was implemented during 2011-2015.

- **Phase II:** It was started in 2015 under which various District & Subordinate courts have been computerised.

What are the Initiatives Taken Under the Project?

- **Improvisation of Network:** Under the **Wide Area Network (WAN) Project**, connectivity has been provided to 99.4% of total Court Complexes across India with an improved **bandwidth** speed.
- **Open-Source Software:** Case Information Software (CIS) is based on **Free and Open-Source Software (FOSS)** which has been **developed by National Informatics Centre (NIC)**.
- **NJDG Database: National Judicial Data Grid (NJDG)** is a database of orders, judgments, and cases, created as an online platform under the eCourts Project.
 - It provides information relating to judicial proceedings/decisions of all computerized district and subordinate courts.
- **Access to Case Status Information: Open Application Programming Interfaces (APIs)** have been introduced in 2020 to allow Central and State Governments and institutional litigants including local bodies to access NJDG data to **improve pendency monitoring and compliance**.
 - **7 platforms have been created to provide real-time information** on case status, cause lists, judgements, etc. to lawyers/Litigants.
 - In addition, **Electronic Case Management Tools (ECMT)** have been created with Mobile Apps for lawyers and judges.
- **Virtual Courts:** 21 **Virtual Courts** in 17 States/UTs have been operationalized to handle traffic challan cases.
 - More than 2.40 crore cases have been handled by 21 virtual courts.
- **Video-Conferencing (VC): Video-conferencing (VC)** facilities have also been enabled between court complexes and corresponding jails.
 - The Supreme Court emerged as a **global leader by conducting lakhs of hearings**.
- **E-filing:** New e-filing system has been rolled out for the electronic filing of legal papers with upgraded features. As of 2022, **a total of 19 High Courts have adopted the model rules of e-Filing**.

Note:

- **Regarding Summons: National Service and Tracking of Electronic Processes (NSTEP)** has been launched for technology enabled process serving and issuing of summons.
 - It has currently been implemented in 28 States/ UTs.
- **User-friendly Portal:** A new “**Judgment Search**” portal has been started with several user-friendly features. This facility is being provided free of cost to everyone.
- **Creating Awareness:** Towards creating widespread awareness and familiarization of eFiling and eCourts services, manuals and brochures have been **made available in English, Hindi and 11 regional languages** for the use of lawyers.

What's New about Phase III?

- **Phase III of the e-Courts Project:**
 - Draft Vision Document for **e-Courts Project Phase III** has been finalized and approved by eCommittee, Supreme Court of India.
 - It **mentions a judicial system that is** more affordable, accessible, cost-effective, predictable, reliable, and transparent for every individual who seeks justice or is part of the delivery of justice in India.
- **Phase III Mentions Various New Features:**
 - Digital and Paperless Courts aimed at bringing court proceedings under a digital format in a court;
 - Online Court focussing on eliminating the presence of litigants or lawyers in the court;
 - Expansion of the scope of Virtual Courts beyond adjudication of Traffic Violations;
 - Use of emerging technologies like **Artificial Intelligence (AI)** and its subsets like **Optical Character Recognition (OCR)** etc for analysis of case pendency, forecasting future litigation, etc.

What are the Related Concerns and Solutions?

Concerns	Solutions
<ul style="list-style-type: none"> ➤ Technical Challenges: <ul style="list-style-type: none"> ○ Complex process that involves upgrading existing technology and infrastructure, which can lead to technical challenges. 	<ul style="list-style-type: none"> ➤ Technical Upgrades: <ul style="list-style-type: none"> ○ Regular upgrades and maintenance of technology infrastructure can help minimize technical challenges.

<ul style="list-style-type: none"> ➤ Cybersecurity Risks: <ul style="list-style-type: none"> ○ With an increasing amount of sensitive and confidential information being stored digitally, courts face the risk of cyber-attacks and data breaches. 	<ul style="list-style-type: none"> ➤ Cybersecurity Measures: <ul style="list-style-type: none"> ○ Implementing r o b u s t cybersecurity measures, such as encryption, secure data storage, and multi-factor authentication.
<ul style="list-style-type: none"> ➤ Equity Concerns: <ul style="list-style-type: none"> ○ The digitization of courts can exacerbate existing disparities in access to justice for marginalized communities, particularly those without access to technology or who have limited digital literacy skills. 	<ul style="list-style-type: none"> ➤ Accessibility and Equity: <ul style="list-style-type: none"> ○ Making digital court systems accessible and user-friendly for marginalized communities can help to ensure that everyone has access to justice.
<ul style="list-style-type: none"> ➤ Preservation of Records: <ul style="list-style-type: none"> ○ Digitizing records poses challenges for preserving historical records and ensuring long-term access to court records. 	<ul style="list-style-type: none"> ➤ Record Preservation Plan: <ul style="list-style-type: none"> ○ Developing and implementing a comprehensive record preservation plan can help ensure the long-term accessibility and preservation of court records.

No Bar on Contesting Two Seats in One Poll

Why in News?

Recently, the Supreme Court has rejected a petition to **bar candidates from contesting from more than one constituency** in the general or assembly elections, calling it a matter of “**parliamentary sovereignty**” and “political democracy”.

- The plea had challenged the constitutionality of **Section 33(7) of the Representation of Peoples Act, 1951**, citing that it is unreasonable for creating **extra**

Note:

burden on the public exchequer as by-elections will invariably follow because candidates have to give up one seat in case, they win on both the seats.

What is the Ruling?

- There is no relevant provision in the Representation of People Act (RPA) that **may warrant an intervention by the court in this matter** and this matter falls “squarely within the legislative domain” and “realm of policy”.
- It is parliament’s will that determines whether political democracy is furthered by granting such a choice.
- **Contesting from multiple seats** can be due to multiple reasons and there would be reasons which weigh in the balance and whether it furthers parliamentary democracy is something which is in the legislative domain.
- This issue lies in the domain of **parliamentary sovereignty**.
 - It highlighted that **parliament did amend the law in 1996 to restrict the number of constituencies to two** whereas earlier, **a candidate could contest from any number of seats**.
 - The parliament has already intervened in the past. The parliament can certainly step in again. At the relevant time when the parliament deems it appropriate to do it, they will do it. There is no question of inaction on anybody’s part.

What are the Provisions

Related to Twin Candidature?

- As per **Section 33(7) of the RPA (Representation of the People Act), 1951**, one candidate can contest from a maximum of two constituencies.
 - More constituencies were allowed until 1996 when the RPA was amended to set the cap at two constituencies.
- **Since 1951, many politicians have used this factor to contest from more than one seat** – sometimes to divide the opponent’s vote, sometimes to profess their party’s power across the country, sometimes to cause a ripple effect in the region surrounding the constituencies **in favor of the candidate’s party and all parties have exploited Section 33(7)**.

What Issues Arise from Twin Candidature?

- **Waste of Resources:**

- Campaigning and contesting in multiple constituencies **can be a waste of Resources and Money**, both for the candidate and the government.
- After sacrificing one of the Constituencies, a by-election is immediately triggered, which again increases the burden on Public Exchequer.
 - For example, in 2014, after PM Narendra Modi won both Vadodara and Varanasi, he vacated his seat in Vadodara, forcing a by-election there.

➤ Conflicts of Interest:

- Running in multiple constituencies can create conflicts of interest, as the candidate **may not be able to devote equal time and attention** to each of their constituencies.

➤ Paradoxical Provisions:

- Section 33(7) of the RPA leads to a situation where it would be negated by another section of the **same Act – specifically, Section 70**.
- While 33(7) allows candidates to contest from two seats, **Section 70 bars candidates from representing two constituencies** in the Lok Sabha/ state. Assembly.

➤ Voter Confusion:

- Voters in different constituencies **may be confused about which candidate is representing them**, or which candidate they should vote for.

➤ Perception of Corruption:

- Running in multiple constituencies **can also raise questions about the candidate’s motivation and create the perception of corruption**, as they may be seeking multiple seats in order to increase their chances of winning office.

➤ Threat to Democracy:

- Twin candidature can be seen as a threat to democracy, as **it can undermine the principle of fair and equal representation**.

The Missing Deputy Speaker

Why in News?

Supreme Court sought response from Centre on a **Public Interest Litigation (PIL)** that contends that not electing a **Deputy Speaker** to the 17th (present) Lok Sabha, since 2019, is “against the letter and spirit of the Constitution”.

Note:

- The post has also been lying vacant in the five state Assemblies including Rajasthan, Uttarakhand, Madhya Pradesh, Uttar Pradesh, and Jharkhand.

What are the Constitutional Provisions?

- **Article 93** says that the **House of the People (Lok Sabha)** shall, as soon as may be, choose two members to be **Speaker** and **Deputy Speaker** so often as the offices become vacant. However, it **does not provide a specific time frame**.
- **Article 178** contains the corresponding position for Speaker and Deputy Speaker of the **Legislative Assembly of a state**.

What are the Different Viewpoints on the Matter?

- **Experts:**
 - Experts point out that both Articles 93 and 178 use the word “shall”, indicating that the **election of Speaker and Deputy Speaker is mandatory** under the Constitution.
- **Union Government:**
 - Government argues that there is **no “immediate requirement”** for a Deputy Speaker as “bills are being passed and discussions are being held” as normal in the House.
 - Further, **there is a panel of nine members selected from different parties** who can act as chairpersons to assist the Speaker to run the House.

Can the Judiciary Intervene in the Matter?

- **Article 122** says, “The validity of any proceedings in Parliament shall not be called in question on the ground of any alleged irregularity of procedure.”
- **Courts usually don’t intervene in the procedural conduct of Parliament.** However, Experts argue that the courts do have jurisdiction to at least inquire into why there has been no election to the post of Deputy Speaker since the Constitution does envisage an election “as soon as may be”.

What are the Provisions Regarding Deputy Speaker?

- **Election:**
 - In Lok Sabha, the election of Deputy Speaker is **governed by Rule 8 of The Rules of Procedure and Conduct of Business in Lok Sabha**.

- The Deputy Speaker is **elected by the Lok Sabha** from amongst its members **right after the election of the Speaker**. The **date of election** of the Deputy Speaker is **fixed by the Speaker**.

Time Frame:

- The election of the Deputy Speaker **usually takes place in the second session** and is **generally not delayed** further in the absence of genuine and unavoidable constraints.

Term of Office and Removal:

- Like the Speaker, the Deputy Speaker remains in office usually for the **entire duration of the House (5 years)**.
- The Deputy Speaker may vacate his/her office earlier in any of the following three cases:
 - If he **ceases to be a member of the Lok Sabha**.
 - If he **resigns** by writing to the Speaker.
 - If he is **removed by a resolution** passed by a **majority of all the then members** of the Lok Sabha. Such a resolution can be moved only after giving **14 days’ advance notice**.

Position of the Deputy Speaker:

- **Under article 95** The Deputy Speaker **performs the duties of the Speaker’s office when it is vacant and acts as the Speaker when the latter is absent** from the sitting of the House. In both the cases, he assumes all the powers of the Speaker.
- Deputy Speaker is **not subordinate to the Speaker**. He is directly responsible to the House. Consequently, if either of them wishes to resign, they must submit their **resignation to the House which implies that Speaker gives resignation to deputy Speaker**.

What is the Need of Deputy Speaker?

- **Maintains Continuity:** Deputy Speaker maintains continuity of the office whenever speaker is absent or the office becomes vacant.
- **Represents The House:** If Speaker resigns, he/she tenders resignation to Deputy Speaker.
 - **If the post of Deputy Speaker is vacant** the Secretary-General receives the letter of resignation and informs the House about it. The resignation is **notified in the Gazette and the Bulletin, as per the Rules for Presiding Officers of Lok Sabha**.

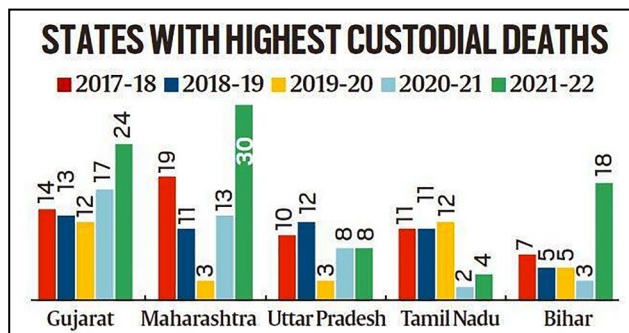
Note:

- **Strengthens the Opposition:** Since 2011, convention has been to offer the position of deputy Speaker to Opposition party.
 - Though Constitutionally, Deputy speaker can be from Opposition or Majority party.

Custodial Death

Why in News?

According to the **Ministry of Home Affairs (MHA)** in the last five years, the highest number of custodial deaths have been reported in Gujarat at 80.



What is Custodial Death?

- **About:**
 - Custodial death is a **death that occurs while a person is in the custody of law enforcement officials or in a correctional facility.** It can occur due to **various causes such as use of excessive force, neglect, or abuse** by the authorities.
 - According to the **Law commission of India**, the crime by a public servant against the arrested or the detained person who is in custody amounts to **custodial violence**.
- **Custodial Death in India:**
 - A total of **146 cases of death in police custody were reported** during 2017-2018,
 - 136 in 2018-2019,
 - 112 in 2019-2020,
 - 100 in 2020-2021,
 - 175 in 2021-2022.
 - In the last five years, the highest number of custodial deaths (80) has been reported in Gujarat, followed by Maharashtra (76), Uttar Pradesh (41), Tamil Nadu (40) and Bihar (38).

- **National Human Rights Commission (NHRC)** has recommended monetary relief in 201 cases, and disciplinary action in one case.

What are the Possible Reasons for Custodial Deaths?

- **Absence of Strong Legislation:**
 - India does not have an **anti-torture legislation** and is yet to criminalise custodial violence, while action against culpable officials remains illusory.
- **Institutional Challenges:**
 - The entire prison system is **inherently opaque** giving **less room to transparency**.
 - India also fails in bringing the much desired **Prison Reforms** and prisons continue to be affected by poor conditions, overcrowding, acute manpower **shortages and minimal safety** against harm in prisons.
- **Excessive Force:**
 - The **use of excessive force** including torture to target **marginalised communities** and control people participating in movements or propagating ideologies which the state perceives as opposed to its stature.
- **Lengthy Judicial Processes:**
 - Lengthy, **expensive formal processes** followed by courts dissuade the poor and the vulnerable.
- **Not Adhering to International Standard:**
 - Although India has signed the **United Nations Convention against Torture** in 1997 its ratification still remains.
 - While signing only indicates the country's intention to meet the obligations set out in the treaty, Ratification, on the other hand, entails bringing in laws and mechanisms to fulfil the commitments.
- **Other Factors:**
 - **Medical neglect** or lack of medical attention, and even suicide.
 - **Poor training or lack of accountability** among law enforcement officials.
 - **Inadequate or substandard conditions** in detention centers.
 - **Underlying health conditions or pre-existing medical conditions** that are not adequately addressed or treated while in custody.

Note:

What are the Provisions Available Regarding Custody?

- **Constitutional Provisions:**
 - **Article 21:**
 - Article 21 states that “No person shall be deprived of his life or personal liberty except according to procedure established by law”.
 - Protection from torture is a **fundamental right** enshrined under Article 21 (Right to Life) of the Indian constitution.
 - **Article 22:**
 - Article 22 provides “Protection against arrest and detention in certain cases”.
 - The right to counsel is also a fundamental right under Article 22(1) of the India constitution.
- **Role of State Government:**
 - Police and public order are **State subjects as per the Seventh Schedule** of the Constitution of India.
 - It is primarily the responsibility of the state government concerned to ensure the protection of human rights.
- **Role of Central Government:**
 - The Central Government issues advisories from time to time and also has enacted the Protection of Human Rights Act (PHR), 1993.
 - It stipulates establishment of the NHRC and State Human Rights Commissions to look into alleged human rights violations by public servants.
- **Legal Provisions:**
 - **Criminal Procedure Code (CrPC):**
 - **Section 41 of Criminal Procedure Code (CrPC)** was amended in 2009 to include safeguards so that arrests and detentions for interrogation have reasonable grounds and documented procedures, arrests are made transparent to family, friends and public, and there is protection through legal representation.
 - **Indian Penal Code:**
 - Sec 330 & 331 of the Indian Penal Code 1860 provides punishment for injury inflicted for extorting confession.
 - Crime of custodial torture against prisoners can be brought under Sec 302, 304, 304A, and 306 of IPC.
 - **Protection under Indian Evidence Act, 1872:**
 - Section 25 of the Act provides that a **confession made to the police cannot be admitted** in Court.

- Section 26 of the Act provides that a confession made to the police by the person cannot be **proved against such person unless it is made before the Magistrate.**
- **Indian Police Act, 1861:**
 - Sections 7 & 29 of the Police Act, 1861 **provide for dismissal, penalty or suspension of police officers** who are negligent in the discharge of their duties or unfit to perform the same.

Expunging in Parliament

Why in News?

A portion of a speech delivered by the opposition leader in the Lok Sabha on **February 7th, 2023** were **expunged from the records of Parliament** by the Speaker's orders.

- The **decision of what parts of a speech** are to be expunged lies with the **Presiding Officer of the House.**

What are the Rules on Expunging from the Record?

- Under **Article 105(2) of the Indian Constitution**, **Members of Parliament enjoy immunity from court proceedings** for their statements in Parliament.
 - **However, their speeches are subject to the discipline of the Rules of Parliament**, the “good sense” of its Members, and the **control of proceedings by the Speaker.**
- Rule 380 of the **Rules of Procedure and Conduct of Business in Lok Sabha** gives the **Speaker the discretion to expunge any words or expressions** used in debate that are considered **defamatory, indecent, unparliamentary, or undignified.**

What are Unparliamentary Expressions?

- The **Lok Sabha Secretariat** has brought out a **bulky volume of ‘Unparliamentary Expressions’**.
 - This book contains words or expressions that would likely be **considered rude or offensive in most cultures.** But it also contains content that would appear to be **fairly harmless and innocuous.**
- The **Presiding Officers - Speaker of Lok Sabha and Chairperson of Rajya Sabha** have the job of keeping such words out of Parliament's records.

Note:

How is the Decision to Expunge a Word (or portion of a speech) Taken?

- The decision to expunge a word or portion of a speech is taken by the Speaker under Rule 380, based on a **recommendation from the head of the reporting section**, taking into account the **context in which the word or sentence was used**.
- The **context is key in making the decision to expunge a remark**. The focus is on removing the minimum number of words.
 - Rule 381 says: The portion of the proceedings of the House so expunged **shall be marked by asterisks and an explanatory footnote** shall be inserted in the proceedings as follows: 'Expunged as ordered by the Chair'.
- The **expunged portions cease to exist in the records of Parliament and cannot be reported by media houses**, although they may have been heard during the live telecast of the proceedings.
- However, the **proliferation of social media** has introduced **challenges in implementing expunction orders**.

Hate Crimes in India

Why in News?

Recently, the **Supreme Court** (SC) observed that there is a **growing consensus around hate speech** and stressed there is **no scope for hate crimes on the basis of religion** in a secular country like India. And, it is the **primary duty of the State to protect citizens from hate crimes**.

What are Hate Crimes?

- **About:**
 - **Hate crimes** refer to **violent or abusive acts committed against individuals or groups** based on their **religion, caste, ethnicity, sexual orientation, or other identities**.
 - These crimes often involve **acts of violence, intimidation, or threats**, and they target individuals or groups who are perceived as being different or marginalized.
 - The **Indian Constitution** guarantees equality and prohibits discrimination on the grounds of **religion, race, caste, sex, or place of birth, (Article 14)** but despite this, hate crimes remain a persistent problem in the country.

➤ **Indian Laws Against Hate Crimes:**

- Hate crime is **neither well defined in the Indian legal framework nor can it be easily reduced to a standard definition** due to the myriad forms it can take.
 - However, **Hate speeches** are dealt under **IPC under Sections 153A, 153B, 295A, 298, 505(1) and 505(2)** that declares that **word, spoken or written, that promotes disharmony, hatred, or insults on basis of religion, ethnicity, culture, language, region, caste, community, race etc.**, is punishable under law.

➤ **Major Factors Responsible for Hate Crime:**

- **Religious and Ethnic Tensions:** India is a diverse country with a multitude of different religious and ethnic groups. These **tensions often lead to violence and hate crimes**.
- **Caste-based Discrimination:** India has a long history of caste-based discrimination, which has **contributed to the marginalization of certain groups** and the perpetration of hate crimes against them.
- **Lack of Political Will:** Despite the presence of laws and regulations to address hate crimes, the **lack of political will to enforce them** effectively has created a permissive environment for such crimes to occur.
- **Social Media and Misinformation:** The spread of hate speech and **misinformation on social media** can further **fuel tensions and contribute to the perpetration of hate crimes**.

What are Possible Ways to Deal with Hate Crimes in India?

- **Awareness Campaigns:** The first step in addressing hate crime is to **raise awareness about its harmful effects** on individuals and society as a whole.
 - **Mass media campaigns and community outreach programs** can be used to educate people about the consequences of hate crime and encourage them to report such incidents.
- **Community Engagement:** Communities can play an important role in addressing hate crime. This can be done by **creating spaces where people can come together and have open and honest discussions** about the issues that divide them.
 - This can also help to **build bridges between different communities** and foster greater understanding and respect.

Note:

- **Use of Technology:** Technology can be used to improve reporting and tracking of hate crimes. This can include **developing online reporting systems and using data analytics** to identify trends and **hotspots for hate crime**.
- **Restorative Justice Programs:** **Restorative justice programs** aim to repair harm and build relationships between victims, offenders and the community.
 - These programs can be used in cases of **hate crime to promote healing and reconciliation between affected communities**.
- **Stiffer Penalties:** Another way to deal with hate crime is to **impose stiffer penalties** on those who engage in such behaviour. This can serve as a **deterrent to others** who may be considering committing hate crimes.

National Commission for Scheduled Tribes

Why in News?

The recent data presented by the **Ministry of Tribal Affairs (MoTA)** revealed that the **National Commission for Scheduled Tribes (NCST)** is currently **functioning with less than 50% of its sanctioned strength**.

What is the NCST?

- **Formation:** NCST was set up in 2004 **by amending Article 338** and by inserting a **new article 338A** in the **Constitution** through the **89th Constitution Amendment Act, 2003**. Hence, it is a constitutional body.
 - By this amendment, the erstwhile National Commission for Scheduled Castes and Scheduled Tribes was **replaced by two separate Commissions namely:**
 - the **National Commission for Scheduled Castes (NCSC)**, and the **NCST**
- **Objective:** Article 338A inter-alia gives powers to the NCST to oversee the implementation of various safeguards provided to **Scheduled Tribes (STs)** under the Constitution or under any other law for time being in force or under any other order to the Government and **to evaluate the working of such safeguards**.
- **Composition:** It consists of a Chairperson, a Vice-Chairperson and 3 other Members who are appointed by the **President** by warrant under his hand and seal.
 - At least **one member should be a woman**.

- The Chairperson, the Vice-Chairperson and the other Members **hold office for a term of 3 years**.
 - The Chairperson has been **given the rank of Union Cabinet Minister**, the Vice Chairperson has the **rank of a Minister of State** and other Members **have the rank of Secretary to the Government of India**.
- The **members are not eligible for appointments for more than two terms**.

What are the Duties and Functions of the NCST?

- To **investigate and monitor all matters relating to the safeguards provided for the STs** under the Constitution or under any other law for the time being in force or under any order of the Government.
- To **inquire into specific complaints** with respect to the deprivation of rights and safeguards of the STs.
- To **participate and advise in the planning process of the socio-economic development of the STs** and to evaluate the progress of their development.
- The **Commission shall provide reports on the operation of those safeguards to the President annually** and as necessary.
- To make in such reports **recommendations as to the measures that should be taken** by the Union or any State for effective implementation of those safeguards.
- The President, **subject to the provisions of any law made by Parliament**, may, by rule, discharge any other functions **relating to the protection, welfare, development, and advancement of the STs**.

What are the Provisions Related to STs in India?

- **Definition:**
 - The Constitution of India does not define the criteria for recognition of STs. As per **Census-1931**, STs are termed as **“backward tribes” living in the “Excluded” and “Partially Excluded” areas**.
 - The **Government of India Act of 1935** called for the first time for representatives of **“backward tribes”** in provincial assemblies.
- **Constitutional Provisions:**
 - **Article 366(25):** It only **provides a process to define STs:**

Note:

- “STs means such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this Constitution.”
- **Article 342(1):** The President with respect to any State/UT (after consultation with the **Governor** in case of state) may specify the tribes/tribal communities/part of or groups within tribes/tribal communities as a Scheduled Tribe in that State/UT.
- **Fifth Schedule:** It lays out provisions for the Administration and Control of Scheduled Areas and STs in states other than 6th Schedule States.
- **Sixth Schedule:** Deals with the administration of the tribal areas in Assam, Meghalaya, Tripura and Mizoram.
- **Statutory Provisions:**
 - Protection of Civil Rights Act, 1955 against Untouchability.
 - **Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989.**
 - **Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996.**
 - **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.**

Armed Forces and Adultery

Why in News?

Recently, the **Supreme Court** has ruled that armed forces can take action against their officers for adulterous acts, while stating the decriminalization of **adultery** does not apply to Armed Forces.

- In September 2018 Joseph Shine Judgment, the SC struck down **Section 497 of the IPC that criminalised adultery**, ruling that it was unconstitutional and **violated women’s right to equality** in treating them as inferior to their husbands.

What is the Recent Ruling?

- The SC clarified that in the 2018 judgment, the SC was concerned **only with the validity of Section 497 of the IPC and Section 198(2)** of the CrPC dealing with adultery, and had “no occasion whatsoever to

consider the effect” **with respect to the Army, Navy and Air Force Acts.**

- Defence personnel of the three wings — **the Army, Navy and the Air Force were governed by special legislation**, the Army Act, the Navy Act and the Air Force Act.
- These special **laws impose restrictions on the fundamental rights of the personnel**, who function in peculiar situation requiring utmost discipline.
- The **three laws are protected by Article 33 of the Constitution**, which allow the government to **modify the fundamental rights** of the armed forces personnel
- The Bench delivered the final Order in the case, clarifying that the Joseph Shine Judgment **did not apply to members of the armed forces who are accused of ‘conduct unbecoming’ and dismissed the application.**

What is the Significance?

- Abolishing adultery as a crime, **might prevent members of the armed services from being found guilty** of adulterous activities. When jawans and officers are deployed to hostile environments, other officers look after their families at base camp, **and the laws and regulations that specify consequences for engaging in adulterous or promiscuous behavior aid** in upholding discipline.
- Armed services soldiers who commit adultery with a coworker’s wife may be cashiered from their jobs for acting unbecomingly.

What is Adultery?

- **About:**
 - The act of adultery is a voluntary sexual intercourse between a married person and someone other than that person’s current spouse or partner.
- **Section 497 of the IPC:**
 - It mandates that whoever has sexual intercourse with the wife of another man, **without the consent or connivance of that man**, such sexual intercourse not amounting the offence of rape is guilty of the offence of adultery and shall be punished.
 - The **law does not punish his wife**, since it presumes that only a man can seduce a woman into a sexual act, and that it is the husband who has suffered due to the sexual relationship of his wife, carried out without his consent. At the same time, **the wife is not protected from similar behaviour committed by her husband.**

Note:

- **Adultery in the Indian Armed Forces:**
 - Regarding the Indian Armed Forces, **military personnel are subject to the provisions of the IPC**, including the law on adultery. In addition, the **Indian military has its own set of regulations and codes of conduct** that prohibit adultery and other forms of immoral behavior.
 - The specific consequences for committing adultery in the Indian Armed Forces may vary, but can **include administrative action, disciplinary action, or court-martial**.
 - The rules and procedures for dealing with such cases **are established by the Indian military justice system**.

Government e-Marketplace

Why in News?

Government e-Marketplace achieves a **Gross Merchandise Value (GMV) of Rs. 1.5 Lakh Crores**.

- GeM has been effectively contributing to the government's commitment of "**Minimum Government, Maximum Governance**".

What is Gross Merchandise Value (GMV)?

- GMV refers to the **value of goods sold via customer-to-customer or e-commerce platforms**.
- It is calculated prior to the **deduction of any fees or expenses**.
- It is a measure of the growth of the business or use of the site to resell products owned by others through consignment.

What is the Government e-marketplace (GeM)?

- **About:**
 - The GeM is an **online platform** launched by the **Ministry of Commerce and Industry, Government of India** in 2016 to **facilitate procurement of goods and services** by various government departments and organisations.
 - It is open to all government departments, public sector undertakings, autonomous bodies and other organisations.
 - Currently, GeM stands at the **third position** after **Singapore's GeBIZ**.
 - **South Korea's KONEPS** is the largest such platform in the world.

➤ **Significance:**

- **Boost to Digital Economy:**
 - The e-marketplace can promote the use of technology in government procurement processes, contributing to the **growth of India's digital economy**.
 - In the last 6.5 years, GeM has **revolutionised the ecosystem of public procurement** in the country through **technology, the digitization of processes, the digital integration of all stakeholders**, and the use of analytics.
- **Improved vendor participation:**
 - GeM can **encourage more vendors, including small and medium enterprises**, to participate in government procurement processes, leading to increased competition and better value for money for the government.
- **Transparency and Efficiency:**
 - A government e-marketplace can improve the transparency and efficiency of procurement processes by **standardising and automating procedures**, reducing the scope for **corruption and human error**.
- **Last Mile Outreach:** GeM has integrated with **1.5 lakh+ India Post offices** and **5.2+ lakh Village Level Entrepreneurs (VLEs)** via the Common Service Centres for **last-mile outreach and service delivery**.
- **Developments:**
 - **Country of Origin Mandatory:** Every time a new product is registered on GeM, sellers are required to list the **Country of Origin**.
 - **Bamboo Market Window:** The **National Bamboo Mission and the Government e-Marketplace (GeM)** have collaborated to have a dedicated window on the GeM portal for marketing of the **Bamboo Goods** (Bamboo based products & Quality Planting Materials).

India's Health Infrastructure

Why in News

Recently, the Indian government has signed loan agreements to borrow up to Rs 13,879 crore to strengthen health infrastructure from international agencies.

Note:

- The loan agreements have been signed to augment **PM-ABHIM (Prime Minister-Ayushman Bharat Health Infrastructure Mission)** which was launched in October 2021 (till FY 2025-26).

What are the Key Points of the Agreement?

- Loan agreements have been signed with **Asian Development Bank (ADB)** for USD 300 million and with Japan International Cooperation Agency (JICA) for 50 billion Japanese Yen.
- The **World Bank** has approved USD 1 billion IBRD (International Bank for Reconstruction and Development) for PM-ABHIM.
 - IBRD is the lending arm of the World Bank.

What is PM-ABHIM?

- **About:**
 - It is one of the largest pan-India schemes for strengthening healthcare infrastructure across the country.
 - It is in addition to the **National Health Mission (NHM)**.
 - It aims to **provide support to 17,788 rural Health and Wellness Centres in 10 'high focus' states** and establish 11,024 urban **Health and Wellness Centres** across the country.
- **Objectives:**
 - To ensure a **robust public health infrastructure in both urban and rural areas**.
 - Establishing an **IT-enabled disease surveillance system**.
 - All the public health labs will be connected through the Integrated Health Information Portal, which will be expanded to all states and UTs.
- **Major Initiatives:**
 - It will help establish 602 critical care hospital blocks, critical care hospital blocks in 12 central hospitals to strengthen **National Centre for Disease Control (NCDC)**, five new regional NCDCs, 10 **Biosafety Levels (BSL) - III** and one BSL-IV and 20 Metropolitan **Surveillance Units (MSUs)**.

What is the Need for Improving Healthcare Infrastructure in India?

- Many **primary healthcare centres (PHCs)** lack basic infrastructural facilities like beds, rooms, toilets, and

drinking water facilities, clean labour rooms to deliver babies, and electricity regularly.

- According to the Rural Health Statistics from MoHFW 2021, **there are a total of 5439 PHCs in the urban areas** and of 3966 PHCs in the tribal area.
- The **NITI Aayog** report 2021 titled 'Reimagining Healthcare in India through Blended Finance' highlighted that **50% of India's population has access to 35% of hospital beds, thus indicating a strong need to strengthen healthcare infrastructure** to ensure access to healthcare facilities for all.

What are the Recent Government Initiatives Related to Healthcare?

- **National Health Mission**
- **Ayushman Bharat**
- **Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)**
- **PM National Dialysis Programme**
- **Janani Shishu Suraksha Karyakram (JSSK)**
- **Rashtriya Bal Swasthya Karyakram (RBSK)**

Crony Capitalism

Why in News?

Parliament witnessed sharp exchanges over the **Adani-Hindenburg issue** and the opposition is accusing it of **crony capitalism** and raising demands for a probe by a **Joint Parliamentary Committee** or a **Chief Justice of India (CJI)**-designated committee.

What is Crony Capitalism?

- **About:**
 - **Crony capitalism** is a term used to describe a **capitalist economic system** in which **individuals or businesses with close ties to political leaders and government officials** use their **political connections to gain an unfair advantage** in the marketplace.
 - In the **Crony Capitalism Index 2021** published by **The Economist**; India was ranked at **7th position** where **crony sector wealth accounted for 8% of Gross Domestic Product (GDP)** of the country.
- **Issues Associated with Crony Capitalism:**
 - **Unfair Advantage in Marketplace:** Crony capitalism can lead to corruption as **businesses use their political connections to gain an unfair advantage** in the marketplace, often by bribing government officials.

Note:

- This can **undermine the rule of law and erode public trust** in government institutions.
- **Distorted Market Competition:** When some businesses are given an unfair advantage through their political connections, it **distorts market competition** and makes it difficult for smaller businesses and entrepreneurs to succeed.
 - This can lead to a **concentration of wealth and power in the hands of a few individuals or corporations.**
- **Reduced Innovation:** The dominant position of large businesses often erodes competition and **discourages them to further innovate** or improvise their products/services.
 - This can **stifle innovation in the overall economy** and lead to a **decline in competitiveness.**
- **Public Distrust of Government and the Economy:** Widespread crony capitalism can lead to a **loss of public trust in government institutions** and the economic system.
 - This can make it difficult for policymakers to implement reforms and for businesses to operate effectively.

How can India Address the Issues Related to Crony Capitalism?

- **Improving Transparency and Accountability:** India can improve transparency and accountability in its **political and economic systems** by implementing measures such as **open data initiatives, increasing the independence of regulatory agencies, and improving the transparency of government contracts and subsidies.**
- **Encouraging Competition:** India can encourage competition by **reducing barriers to entry for smaller businesses and entrepreneurs, such as reducing red tape and streamlining regulations.**
 - This can make it easier for new entrants to compete with established businesses and **reduce the concentration of wealth and power in the hands of a few individuals or corporations.**
- **Towards Corporate Ethical Responsibility:** India can promote responsible business practices by implementing measures to ensure that **businesses act ethically and sustainably, in lines of corporate social responsibility** and sustainability initiatives.

- This can **increase public trust in the economic system** and encourage businesses to act in the best interests of society as a whole.
- **Encouraging Responsible Political Behaviour:** India can encourage responsible political behaviour by **increasing the transparency of political donations and lobbying activities.**
 - This can reduce the potential for corruption and ensure that elected officials are held accountable for their actions.

Primary Agricultural Credit Societies

Why in News?

Recently, the **Union Budget 2023** has announced Rs 2,516 crore for digitization of 63,000 **Primary Agricultural Credit Societies (PACS)** over the next five years.

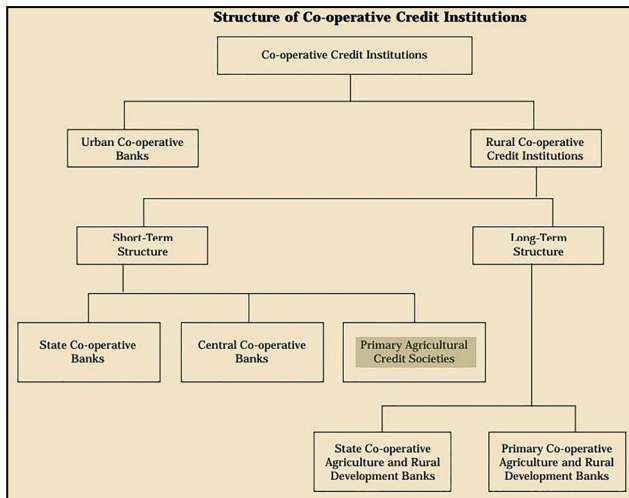
What is the Aim of Digitizing PACS?

- It aims at bringing greater **transparency and accountability in their operations** and enabling them to diversify their business and undertake more activities.
- It aims to help PACS become a **nodal centre for providing various services** such as **Direct Benefit Transfer (DBT), Interest Subvention Scheme (ISS), Crop Insurance Scheme (PMFBY), and inputs like fertilizers and seeds.**

What is Primary Agricultural Credit Societies?

- **About:**
 - PACS are village level **cooperative credit societies** that serve as the last link in a three-tier cooperative credit structure headed by the **State Cooperative Banks (SCB) at the state level.**
 - Credit from the SCBs is **transferred to the District Central Cooperative Banks (DCCBs)**, that operate at the district level. The DCCBs work with PACS, which deal directly with farmers.
 - PACSs provide **short-term, and medium-term agricultural loans** to the farmers for the various agricultural and farming activities.
 - The first PACS was formed in 1904.

Note:



➤ Status:

- A report published by the Reserve Bank of India on December 27, 2022 put the number of PACS at 1.02 lakh. At the end of March 2021, only 47,297 of them were in profit.

What is the Significance of PACS?

➤ Access to Credit:

- PACS provide small farmers with access to credit, which they can use to purchase seeds, fertilizers, and other inputs for their farms. This helps them **to improve their production and increase their income.**

➤ Financial Inclusion:

- PACS help to increase **financial inclusion in rural areas**, where access to formal financial services is limited. They provide basic banking services, such as savings and loan accounts, to farmers who may not have access to formal banking services.

➤ Convenient Services:

- PACS are often located in rural areas, which makes it convenient for farmers to access their services. This is important because many farmers are unable to travel to banks in urban areas to access financial services.
- PACS have the capacity **to extend credit with minimal paperwork within a short time.**

➤ Promoting Savings Culture:

- PACS encourage farmers to save money, which can be **used to improve their livelihoods and invest in their farms.**

➤ Enhancing Credit Discipline:

- PACS promote credit discipline among farmers by requiring them to repay their loans on time. This helps **to reduce the risk of default, which can be a major challenge in the rural financial sector.**

What are the Issues with the PACS?

➤ Inadequate Coverage:

- Though geographically active PACS cover **about 90% of 5.8 villages**, there are parts of the country, especially in **the north-east, where this coverage is very low.**
- Further, the rural population covered as members is only 50% of all the rural households.

➤ Inadequate Resources:

- The resources of the PACS are **much too inadequate in relation to the short-and medium-term credit needs** of the rural economy.
- The bulk of even these inadequate funds come from higher financing agencies and not through owned funds of societies or deposit mobilization by them.

➤ Overdues and NPAs:

- Large over-dues have become a big problem for the PACS.
 - As per the RBI report, PACS had reported **lending worth Rs 1,43,044 crore and NPAs of Rs 72,550 crore.** Maharashtra has 20,897 PACS of which 11,326 are in losses
- They curb the circulation of loanable funds, reduce the **borrowing as well as lending power of societies**, and give them the bad image of the societies of defaulting debtors are willful.

Pradhan Mantri Mudra Yojana

Why in News?

As per the sample survey conducted at the national level by **Ministry of Labour and Employment (MoLE)** to assess **employment generation under Pradhan Mantri Mudra Yojana (PMMY)**, the scheme **helped in generating 1.12 crore net additional employment** during a period of approximately **3 years (i.e., from 2015 to 2018).**

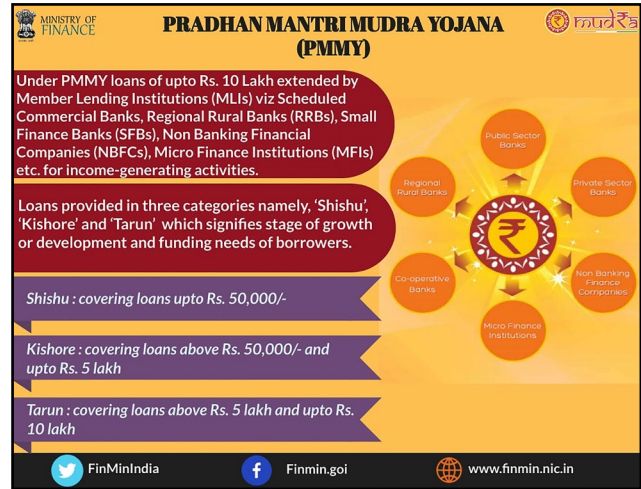
Note:

What are the Other Highlights of the Survey?

- Out of **81 lakh** loans given in the state of Rajasthan, over **52 lakh** were given to women entrepreneurs in the last three financial years, which is **64% of all loans**.
- The **PMMY** has been expanded over time:
 - In **2016-17**, the scheme was expanded to cover **activities related to agriculture**, such as fishing, dairy, and food processing.
 - In **2017-18**, loans for **tractors and power tillers** became eligible under PMMY, with a maximum limit of Rs. 10 lakhs.
 - From **2018-19** onwards, loans for **two-wheelers for commercial use** were included in PMMY.

What is Pradhan Mantri Mudra Yojana?

- **About:**
 - PMMY was launched by the Government of India in 2015.
 - The **PMMY provides collateral-free institutional loans up to Rs. 10 lakhs for small business enterprises**.
- **Funding Provision:**
 - It is provided by **Member Lending Institutions (MLIs)** i.e. **Scheduled Commercial Banks (SCBs), Regional Rural Banks (RRBs), Non-Banking Financial Companies (NBFCs) and Micro Finance Institutions (MFIs)**.
- **Types:**
 - The loan can be used for income-generating activities in the **manufacturing, trading, services sector, and agriculture**.
 - There are **three loan products** under PMMY:
 - **Shishu** (loans up to Rs. 50,000)
 - **Kishore** (loans between Rs. 50,000 and Rs. 5 lakh)
 - **Tarun** (loans between Rs. 5 lakh and Rs. 10 lakh).
- **Steps Taken for the Improvement of the Scheme:**
 - Provision for online applications through **udyamimitra portal**.
 - Some **Public Sector Banks (PSBs)** have put end-to-end digital lending for **automated sanctions under PMMY**.
 - Intensive publicity campaigns by **PSBs and Mudra Ltd.** for **increased visibility of the scheme** amongst the stakeholders.
 - Nomination of **Mudra Nodal Officers** in PSBs.



Digital Payments Utsav

Why in News?

Recently, the Ministry for Electronics & Information Technology launched the 'Digital Payments Utsav', a comprehensive campaign promoting **digital payments** across India along with the **launch of several significant initiatives**.

- The campaign will showcase India's journey of digital transformation, with a series of events and initiatives to be held from **9th February to 9th October 2023**.

What are the Highlights of the Event?

- **Aim:**
 - The focus of the campaign will be on **promoting digital payments in the country**, especially in the cities of Lucknow, Pune, Hyderabad, and Bengaluru, as part of the **G20 Digital Economy Working Group (DEWG)** event.
- **Recognising the Efforts:**
 - **28 DigiDhan Awards** were presented to top-performing banks, bankers, and fintech companies in **different categories for their performance in the digital payments space**.
 - The awards recognize the efforts of these organizations in **promoting digital payments and contributing to the growth of the digital economy**.
- **Significance:**
 - The comprehensive campaign is **expected to bring together various stakeholders**, including

Note:

the government, industry, and citizens, to drive the growth of the digital economy and promote **financial inclusion**.

- These initiatives will **expand the reach of the Unified Payment Interface (UPI) in India** and beyond. The focus is on connecting the unconnected areas of India and making UPI a **global payment method**.
 - The **National Payments Corporation of India (NPCI)** has already taken steps in this direction by partnering with some countries.

What are the Other Digital Initiatives?

- **Digital India Bhashini:**
 - Digital India BHASHINI is India's **Artificial Intelligence (AI)** led language translation platform.
 - A Bhashini Platform will make AI and **Natural Language Processing (NLP)** resources available to **MSME (Medium, Small and Micro Enterprises), Startups** and Individual Innovators in the public domain.
- **Digital India GENESIS:**
 - Digital India GENESIS' (Gen-next Support for Innovative Startups) is a **national deep-tech startup platform** to discover, support, grow and make successful startups in **Tier-II and Tier-III cities of India**.
- **My Scheme:**
 - It is a service discovery platform facilitating **access to Government Schemes**.
 - It aims to offer a one-stop search and discovery portal where **users can find schemes that they are eligible for**.
- **Meri Pehchaan:**
 - It is National Single Sign On (NSSO) for **One Citizen Login**.
 - It is a user authentication service in which a **single set of credentials provide access to multiple online applications or services**.
- **Chips to Startup (C2S) Programme:**
 - The C2S Programme **aims to train specialized manpower in the area of design of semiconductor chips** at Bachelors, Masters and Research levels, and act as a catalyst for the growth of Startups involved in semiconductor design in the country.
 - It offers to mentor at the organisational level and makes available **State-of-the-art facilities for design to the institutions**.
- **Digital Locker (DigiLocker):**

- It **enables paperless governance** by providing digital space for users for their document verification and storage.
- It will help position India as the leader of building Digital Transformation projects at population scale.

➤ **MeghRaj:**

- In order to utilise and harness the benefits of **Cloud Computing**, the Government has embarked upon an ambitious initiative – **GI Cloud, which has been named MeghRaj**.
- The focus of this initiative is **to accelerate the delivery of e-services** in the country, while optimising the Information and Communication Technology (ICT) spending of the Government.

➤ **Indiastack Global:**

- It is a global repository of key projects implemented under India Stack like **Aadhaar, UPI, UPI123PAY**, Cowin Vaccination Platform, **Government e Marketplace, DIKSHA Platform** and **Ayushman Bharat Digital Health Mission**.
 - UPI services **will soon be available to Non-Resident Indians (NRIs)** living in 10 countries: Australia, Canada, Hong Kong, Oman, Qatar, Saudi Arabia, Singapore, UAE, the UK, and the USA.
 - National Language Translation Mission and Digital Payments have **come together to make UPI 123 Pay available in the local language**.

What is Digital India Programme?

➤ **About:**

- It was **launched in 2015**.
- The programme has been enabled for several important Government schemes, such as **BharatNet, Make in India, Startup India** and **Standup India, industrial corridors**, etc.

➤ **Vision Areas:**

- Digital infrastructure as Utility to Every Citizen.
- Governance and services on demand.
- Digital empowerment of citizens.

➤ **Objectives:**

- To prepare India for a knowledge future.
- For being transformative that is **to realize IT (Indian Talent) + IT (Information Technology) = IT (India Tomorrow)**.
- Making technology central to enabling change.
 - **On being an Umbrella Programme – covering many departments.**

Note:

Amrit Sarovar Mission

Why in News?

A target of 50,000 **Amrit Sarovars** was set to be completed by August 15, 2023. So far, 60% of the target has been achieved with over 30,000 Amrit Sarovars constructed in the span of 9 months.

What is the Amrit Sarovar Mission?

➤ About:

- On April 24, 2022, Mission Amrit Sarovar was launched as part of India's "Azadi Ka Amrit Mahotsav" celebrations for the **75th year of independence**.
- The mission aims to construct/rejuvenate **at least 75 Amrit Sarovars in each district across India** to overcome the water crisis in rural areas.

➤ Major Features of Mission Amrit Sarovar:

- **Whole of the Government Approach:**
 - **Six central government Ministries** are working together in conjunction with technical organisations like **Bhaskaracharya National Institute of Space Applications and Geo-Informatics (BISAG-N)** and state/union territory governments in a "**Whole of Government**" approach.
 - **Six ministries** are Ministry of Rural Development, Ministry of Jal Shakti, Ministry of Culture, Ministry of Panchayati Raj, Ministry of Environment, Forest & Climate Change.
- **Jan Bhagidari:**
 - It has been the core of this Mission and involves **people's participation at all levels**.
 - States/UTs are leveraging the participation of **freedom fighters, eldest members of the panchayat, family members of freedom fighters and martyrs, Padma Awardees**, etc.
- **Innovative Measures:**
 - The **Ministries of Railways and Road Transport and Highways** are using the **excavated soil/silt** for infrastructure projects near the Amrit Sarovar sites.
 - **Also, Public and Corporate Social Responsibility (CSR) bodies** are playing a significant role in the construction and rejuvenation of several Amrit Sarovars across India.

○ Boosting Rural Livelihood:

- The completed Sarovars are **boosting rural livelihoods** by being used for activities such as irrigation, fisheries, duckery, cultivation of water chestnut and animal husbandry, among others.
 - These activities are carried out by different user groups linked to each Amrit Sarovar.

State-wide Crackdown on Child Marriages

Why in News?

Over the last few days, the Assam government has **arrested over 2,000 men in a campaign against child marriages** that have taken place in the state.

- The police **will retrospectively book people who participated in child marriage in the last seven years** and the focus will especially be on "mullahs, kazis, and pujaris" conducting these marriages. The arrests **come in the backdrop of growing debate on the minimum age of marriage of Muslim women**.

Under What Law are the Arrests Being Made?

- The men who married girls below 14 years of age would be booked under the **Protection of Children From Sexual Offences (POCSO) Act** and those marrying girls between the age of 14 and 18 years would be booked under the **Prohibition of Child Marriage Act (PCMA), 2006**.
- **POCSO Act:**
 - The POCSO Act, of 2012 **criminalises sex between a minor and an adult**. The law **does not recognize a minor's consent as valid**.
 - Sexual assault under POCSO is a **non-bailable, cognisable offence**. This means that the **police can make an arrest without warrant**.
 - So, a **presumption of sexual assault is being made** in cases of child marriage involving minor girls below the age of 14.
 - Sexual assault, that is not penetrative, **carries a minimum imprisonment of three years** that may extend to five years with a fine.
 - **Under Section 19**, the Act imposes a "**mandatory reporting obligation**" which requires every person who suspects or has knowledge of a sexual offence

Note:

being committed against a child **must report it to the police or the Special Juvenile Police Unit.** Failure to do so will result in imprisonment, a fine, or both.

- **PCMA, 2006:**
 - It says that child marriages are **illegal but not void.** They are voidable at the minor's choice if **he/she petitions the court to declare the marriage null and void.**
 - The Act stipulates **18 years as the minimum marriageable age for women, while for men it is 21 years.**
 - The Act punishes child marriage with **rigorous imprisonment which may extend to two years or with a fine** which may extend to one lakh rupees or both.
 - The punishment also **extends to anyone who performs, conducts, directs, or abets any child marriage.**

What is the Debate on Muslim Age of Marriage?

- Under Muslim personal laws, the marriage of a bride **who has attained puberty is considered.**
 - Puberty is presumed, in the absence of evidence, **on completion of the age of fifteen years.**
- This **gap between Muslim personal law and special legislation prohibiting child marriages or sexual activity of minors** puts a shadow on criminality in such marriages.

What are the Personal Laws of Other Religions?

- The **Hindu Succession Act of 1956** lays out guidelines for property inheritance among Hindus, Buddhists, Jains and Sikhs.
- The **Parsi Marriage and Divorce Act of 1936** lays out rules to be followed by the Parsis according to their religious traditions.
- The **Hindu Marriage Act of 1955** codified laws related to marriage among Hindus.

What is the Central Government's Stand?

- At the time of India's independence, **the minimum marriageable age stood at 15 years for females and 18 years for men.**
 - In 1978, the government **increased it to 18 for girls and 21 for men.**
- In 2008, the report of the **Law Commission** the **minimum marriageable age for both men and women should be 18 years of age.**

- In 2020, the **Jaya Jaitly Committee** was established by the **Ministry of Women & Child Development** which also **recommended the same in light of factors like reproductive health, education,** etc.
- In 2021, the Central government sought to introduce the **Prevention of Child Marriage (Amendment) Bill 2021, to raise the manageable age for women across all religions, from 18 to 21 years.**
 - As per the Union Minister for Women and Child Development this Amendment will **apply to all communities** in the country and **once enacted, will supersede existing marriage and personal laws.**

Note:

- Along with the **Indian laws and constitutional provisions** modern international laws and conventions do mandate countries **to stipulate a minimum legal age for marriage.** But child marriages **continue to have religious sanctions in large parts of India.**
- **Some of the conventions are:**
 - The United Nations (UN) Convention on Consent to Marriage (1962)
 - Minimum Age for Marriage and Registration of Marriages (1962)
 - The UN Convention on the Elimination of All Forms of Discrimination against Women (1979)
 - The Beijing Declaration (1995)

Zero-Draft of Pandemic Treaty

Why in News?

Recently, the **World Health Organization's (WHO)** has published a **'Zero-Draft' of the Pandemic Treaty,** aiming to bring in Global and National-Level **Pandemic Preparedness.**

- The treaty aims to **address the challenges posed by pandemics and other global health emergencies.**
- The zero-draft of the pandemic treaty was established based on recognising the catastrophic failure of the international community in showing solidarity and equity in response to the **Covid-19 Pandemic.**

What are the Principal Components of the Draft?

- **Global Cooperation:**
 - It calls for **increased global coordination and cooperation** in the preparation for and response to pandemics and other **global health emergencies.**

Note:

- **Strengthening of Health Systems:**
 - It emphasizes the **need to strengthen health systems in all countries**, particularly in **low- and middle-income countries**, to ensure they are better prepared to respond to pandemics and other global health emergencies.
- **Investment in Research and Development:**
 - It calls for **improved access to essential health technologies**, such as **vaccines**, diagnostics, and treatments, during pandemics and other global health emergencies.
 - It calls for **increased investment in research and development** of health technologies, particularly for diseases that pose a significant threat to global health.
- **Transparency in Sharing of Information:**
 - It calls for **increased transparency and sharing of information about pandemics** and other global health emergencies, including data on the spread of diseases and the effectiveness of interventions.
- **Pathogen Access and Benefit-Sharing System:**
 - The constitution of PABS has been constituted under the WHO, making Genomic sequences of all pathogens with pandemic potential to **be shared on an “equal footing” in the system.**
 - The PABS system is an important tool for ensuring the responsible and equitable use of pathogens and their genetic resources in the research and development of **new medicines and vaccines**, while also recognizing the rights and interests of the countries and communities that provide these resources.
- **Addressing Gender Disparities:**
 - In addressing gender disparities in the healthcare workforce, the draft aims to **“ensure meaningful representation, engagement, participation and empowerment of all health and care workers”** by stressing equal pay and addressing barriers specific to women in taking leadership roles.

What is the Existing Framework for Global Health Cooperation?

- The **International Health Regulations (IHR)**, is an instrument of international law that is **legally-binding on 196 countries** including India.
- It aims for international collaboration to prevent, protect against, control, and provide a **public health response to the international spread of disease.**

- It provides an overarching legal framework that defines countries’ rights and obligations in handling public health events and emergencies that have the potential to cross borders.
- IHR empowers the WHO to act as the main global surveillance system. The Regulations also outline the criteria to determine whether or not a particular event constitutes a PHEIC (Public Health Emergency of International Concern).

What are the Challenges to the Healthcare Sector Globally?

- **Lack of Access to Healthcare:**
 - Despite advances in medical technology, **many populations around the world still lack access** to basic healthcare services, particularly in low- and middle-income countries.
 - As populations around the world age, there is **increasing demand for long-term care services**, which are often expensive and not covered by traditional health insurance.
- **Healthcare Infrastructure:**
 - Public health data and infrastructure are fragmented and lacking any global standard causing a **major concern regarding quality and reliability of existing healthcare systems.**
 - Besides that, a large part of hospital expenditures is used to correct preventable medical mistakes or infections that **people catch in hospitals. Additionally, medical staff are in short supply.**
- **Affordability and Disparity:**
 - Healthcare can be expensive, and many individuals, particularly those in low- and middle-income countries, struggle to afford basic healthcare services.
 - Despite advances in medical technology, significant inequalities in health outcomes persist globally, particularly **for marginalized populations.**
- **Scarcity of Health Personnels:**
 - The healthcare sector faces shortages of trained and qualified health workers in many countries, particularly in low- and middle-income countries.
 - India has 1 government doctor per 10,189 people (the WHO recommends a ratio of 1:1,000), **indicating a shortage of 6,00,000 doctors.**
- **Non-Communicable Diseases:**
 - Non-communicable diseases, such as **heart disease, stroke, cancer, and diabetes, are becoming increasingly common** and place a significant burden on healthcare systems.

Note:

Economic Scenario

Highlights

- Economic Survey 2022-23
- Union Budget 2023-24
- New Tax Regime
- India's Fiscal Deficit Targets
- Status and Proceeds of Disinvestment
- India Energy Week
- Green Energy and Jobs
- PLI and India's Growth Ecosystem
- Startup India Seed Fund Scheme
- India's Farm Exports
- Lab-Grown Diamonds
- Protecting Investors from Market Volatility
- World Economic Outlook: IMF

Economic Survey 2022-23

Why in News?

The **Union Finance Minister** tabled the **Economic Survey for the Financial Year 2022-23**, after the **President's address**.

- The **Economic Survey 2022-23** highlighted that **India's economic recovery from the pandemic is complete** and the **economy is expected to grow in the range of 6% to 6.8%** in the coming financial year **2023-24**.

What is the Economic Survey?

- The Economic Survey of India is an annual document released by the Ministry of Finance. It is usually presented in **Parliament a day before the Union Budget**.
- It is prepared by the **Economics Division of the Department of Economic Affairs (DEA)** under the guidance of the **Chief Economic Advisor**.
- It reviews the developments in the Indian economy over the previous 12 months and presents the economic outlook for the current fiscal year.
- It also presents the **current state of the Indian economy**, including data on **gross domestic product (GDP), inflation, employment, and trade**.
- The **first Economic Survey in India was presented in the year 1950-51**.
 - Up to 1964, it was presented along with the Union Budget. From 1964 onwards, it has been delinked from the Budget.

How was the State of Indian Economy in 2022-23?

➤ Performance:

- India hosted the world's **second-largest vaccination drive**, involving over **2 billion doses**.
- The improvement in the financial health of public sector banks has enabled them to increase **credit supply, leading to rapid credit growth for the micro, small, and medium enterprises (MSME) sector**.

➤ Current Challenges:

- Indian economy still faces persistent challenges, including the **depreciating rupee and the possibility of further US Fed interest rate hikes**.
- The **current account deficit (CAD)** may also continue to widen as global commodity prices remain elevated.

➤ Outlook 2023-24:

- India's economic growth in FY23 is being led by **private consumption and capital formation**, generating employment.
 - The **recovery of MSMEs** is progressing, with the **Emergency Credit Linked Guarantee Scheme (ECLGS)** easing their debt concerns.
- **Global growth is projected to decline in 2023, but India's growth is expected to be swift in FY24** with a vigorous credit disbursement and capital investment cycle.
- The expansion of public digital platforms and measures such as **PM GatiShakti, the National Logistics Policy, and the Production-Linked Incentive** schemes will support economic growth and boost manufacturing output.

Note:

What is India's Medium-term Growth Outlook?

➤ Context:

- The current decade is similar to 1998-2002, where transformative reforms had delayed growth returns due to temporary shocks, but structural reforms later paid growth dividends.

➤ 2014-2022 Period:

- 2014-2022 is an important period in India's economic history with reforms aimed at improving the **ease of living and doing business**.
 - The reforms were based on creating public goods, trust-based governance, co-partnering with the private sector and increasing agricultural productivity.
 - However, due to balance sheet stress and global shocks, key macroeconomic variables were negatively impacted during this period.

➤ 2023-2030 Outlook:

- The growth outlook is better than pre-pandemic years and the Indian economy is prepared to grow at its potential in the medium term.

What were the Major Fiscal Developments Related to Revenue?

➤ Context:

- During the fiscal year 2023, the Union Government's finances showed resilience, which was a result of various factors like the increase in direct taxes and **Goods and Services Tax (GST)** revenues.

➤ Revenue Growth and Performance:

- From April to November 2022, the **Gross Tax Revenue** experienced a YoY growth of 15.5%, which was primarily driven by the strong growth of both direct taxes and GST.
- **GST has established itself as a vital source of revenue** for the central and state governments, as seen from the YoY growth of 24.8% from April to December 2022.
- Over the years, the **Centre's Capex has steadily increased from 1.7% of GDP (FY09 to FY20) to 2.5% of GDP in FY22**.
 - To prioritise spending on Capex, the Centre incentivized the state governments through **interest-free loans and increased borrowing limits**.

- The increased Capex, particularly in **infrastructure-intensive sectors** such as roads and highways, railways, housing, and urban affairs, has **substantial positive effects on medium-term growth**.

➤ Towards Sustainable Debt-to-GDP ratio:

- The government's strategy of focusing on Capex-led growth will keep the **growth-interest rate differential positive**, resulting in a **sustainable debt-to-GDP ratio** in the medium run.

What was the Status of Monetary Management and Financial Intermediation?

➤ Context:

- The **Reserve Bank of India (RBI)** started its **monetary tightening cycle in April 2022**, and since then, they have **raised the repo rate by 225 basis points**.
 - This has led to a **decrease in surplus liquidity and improved the balance sheets of financial institutions**, making it easier for them to lend money.
- It is expected that the **growth in credit offtake will continue and be sustained by an increase in private capital expenditure**, which will start a virtuous cycle of investment.

➤ Performance and Growth:

- The **Gross Non-Performing Assets (GNPA) ratio of SCBs (scheduled commercial banks)** has dropped to a seven-year low of 5.0, and the **Capital-to-Risk Weighted Assets Ratio (CRAR) remains healthy at 16.0**.
- In FY22, the recovery rate through the **Insolvency and Bankruptcy (IBC) channel was the highest compared to other channels**, which shows a positive trend for the SCBs.

How was Prices and Inflation Regulated in 2022-23?

➤ Context:

- In 2022, India experienced three phases of consumer price inflation. During the first phase, from **January to April, inflation peaked at 7.8% due to the war between Russia and Ukraine and crop shortages caused by heat waves** in some parts of the country.
 - However, prompt actions by the government and the Reserve Bank of India helped bring inflation under control, with a **decline to 5.7% by December**.

Note:

- **Bottlenecks:**
 - The **gap between the wholesale price index and the consumer price index** remained wide, with core inflation still showing resistance to change.
- **Regulatory Measures:**
 - The government adopted a **multi-pronged approach to control the increase in prices**, which included: **reducing the export duty of petrol and diesel, bringing the import duty on major inputs to zero, imposing export ban on wheat products and export duty on rice**, and reducing the basic duty on crude and refined palm oil.
 - The government's timely policy intervention in the **housing sector, along with low home loan interest rates**, boosted demand in the affordable housing segment and **attracted more buyers in FY23**.
- **RBI's Forecast:**
 - The RBI forecasts **higher domestic prices for cereals, spices, and milk in the near future**, mainly due to supply shortages and rising feed costs.
 - The **changing climate around the world** is also increasing the risks of higher food prices.

What is the Status of Social Infrastructure and Employment in India during 2022-23?

- **Context:**
 - The government **increased its spending on the social sector**. The **twin pillars of education and health are being strengthened to form human capital**.
 - Overall, the government's social sector spending increased from **Rs. 9.1 lakh crore in FY16 to Rs. 21.3 lakh crore in FY23**.
- **Social Infrastructure:**
 - **Education:**
 - The **National Education Policy 2020** is expected to enrich the nation's growth and development prospects.
 - The government's efforts have led to **improvements in enrollment ratios and gender parity in schools**.
 - **Healthcare:**
 - In FY23, the government's **budgeted spending on the health sector was 2.1% of GDP**, up from **1.6% in FY21**.

- As of **January 4, 2023**, nearly **22 crore people** have benefited from the **Ayushman Bharat Scheme**, and over 1.54 lakh health and wellness centres have been established across the country.
- **Poverty Alleviation:**
 - The progress in attaining the **Sustainable Development Goal** of halving poverty by 2030 is demonstrated by the fact that more than **41 crore people have exited poverty between 2005-06 and 2019-21** according to the **UN Multidimensional Poverty Index**.
- **Aadhaar and Co-Win:**
 - **Aadhar played a critical role in developing the Co-WIN platform** and administering over 2 billion vaccine doses.
- **Aspirational Districts Programme:**
 - The **Aspirational Districts Programme** is seen as a model of good governance, especially in remote areas.
- **Employment:**
 - **Labour Force Participation:** Labour markets have recovered from the effects of Covid-19, with **unemployment rates falling from 5.8% in 2018-19 to 4.2% in 2020-21**.
 - The **Rural Female Labor Force Participation Rate** has risen from 19.7% in 2018-19 to 27.7% in 2020-21, which is a positive development.
 - **eShram Portal:** The **eShram portal** was created to create a national **database of unorganised workers**, and as of December 31, 2022, over 28.5 crore workers were registered.
 - **Jam Trinity and DBT:** The **JAM trinity, combined with Direct Benefit Transfer(DBT)**, has brought marginalised people into the **formal financial system, empowering them**.

How was India's Economic Performance in Climate Change and Environment?

- **Context:**
 - The **Economic Survey 2022-23** presented a chapter on 'Climate Change and Environment' listing out **India's nationally determined contributions (NDCs)** that include the **transition to renewable energy resources, commitment to achieve "Net Zero" emissions by 2070** and steps taken to **become energy independent**.

Note:

➤ Performance and Goals:

- India has also **committed to reduce emissions intensity of its GDP by 45% by 2030** from 2005 levels.
- Another target has been set to achieve about **50% cumulative electric power installed capacity from non-fossil fuel-based** energy resources by 2030.
 - India has **already achieved its target of 40%** installed electric capacity from non-fossil fuels ahead of 2030 and the likely installed capacity from non-fossil fuels will be more than 500 GW by 2030.
 - This would lead to a **decline of average emission rate by around 29% by 2029-30** (compared to 2014-15).
- A mass **movement LIFE– Lifestyle for Environment** was launched at the **Glasgow climate summit** at UNFCCC COP26.
- In Nov 2022, **India's first Sovereign Green Bonds (SGrBs) Framework** was issued. **RBI auctioned two tranches of ₹4,000 crore SGrBs.**
- The survey also highlighted **India's plans to be energy independent by 2047**, by relying on green hydrogen through the **National Green Hydrogen Mission.**
- The survey shows that **India is becoming a favoured destination for renewables** with investments standing at USD 78.1 billion in the past 7 years.
 - **Solar power capacity installed**, a key metric under the National Solar Mission, stood at 61.6 GW as of October 2022.

How was India's Economic Performance in Agriculture and Food Management?

➤ Context:

- India's **agriculture sector** has witnessed a **robust average annual growth rate of 4.6%** over the last six years. This enabled agriculture to contribute significantly towards the country's overall growth, development and food security.

➤ Performance:

- In recent years, **India has emerged as the net exporter of agricultural products**, with exports in 2021-22 touching a record USD 50.2 billion.
- Agri sector saw buoyant growth due to the following measures taken by the govt:

- **Augmentation of crop and livestock productivity**
- **MSP for all mandated crops** fixed at 1.5 times of all India weighted average cost of production
- Promotion of **crop diversification**
- Mechanisation and **boost to horticulture and organic farming.**

- **Private investment in agriculture increased** to 9.3% in 2020-21. **Institutional credit to the Agri sector** continued to grow to **Rs. 18.6 lakh crore in 2021-22.**
- **Foodgrains production in India saw sustained increase** and stood at 315.7 million tonnes in 2021-22.
 - As per the **First Advance Estimates for 2022-23 (Kharif only)**, total foodgrains production in the country is estimated at **149.9 million tonnes** which is **higher than the average Kharif foodgrain production** of the previous five years (2016-17 to 2020-21).
 - Also, the GoI has recently decided to provide **free foodgrains to beneficiaries under the NFSA 2013 for one year** from 1 January 2023.
- The **National Agriculture Market (e-NAM)** Scheme has established an online, competitive, transparent bidding system to ensure farmers get remunerative prices for their produce (covering 1.74 crore farmers and 2.39 lakh traders).
- Under **Paramparagat Krishi Vikas Yojana (PKVY)**, organic farming is being promoted through **Farmer Producer Organisations (FPO).**
- **India stands at the forefront to promote millets** after the UNGA, in its 75th session in 2021, declared **2023 the International Year of Millets (IYM).**

How was India's Economic Performance in the Industrial Sector?

➤ Context:

- The Economic Survey 2022-23 showed a **rise of 3.7% of overall Gross Value Added (GVA) by the Industrial Sector** (for the first half of FY 22-23) which is higher than the average growth of 2.8% achieved in the first half of the last decade.

➤ Performance:

- Robust **growth in Private Final Consumption Expenditure, export stimulus** during the first half of the year, **increase in investment demand** triggered by enhanced public capex and **strengthened bank and corporate balance sheets** have provided a demand stimulus to industrial growth.

Note:

- The supply response of the industry to the demand stimulus has been robust.
- Both the **Purchasing Managers Index (PMI)** and **Index of Industrial Production (IIP)** are in an **upward growth trajectory since July 2021**.
- **Credit to both MSMEs and large industries** have shown double digit growth (MSMEs by 30% since Jan 2022).
- **India's electronics exports have risen nearly threefold**, from US \$4.4 billion in FY19 to US \$11.6 Billion in FY22 with **India becoming the second-largest mobile phone manufacturer globally**.
- **Foreign Direct Investment (FDI) flows into the Pharma Industry** have risen four times, from US \$180 million in FY19 to US \$699 million in FY22.
- **Production Linked Incentive (PLI) schemes** were also introduced across 14 categories, with an estimated capex of Rs. 4 lakh crore over the next five years, to plug India into global supply chains.
- Over 39,000 **compliances have been reduced** and more than 3500 provisions decriminalised as of January 2023 by **amending the Companies Act 2013**.
- To further enhance India's integration in the global value chain, '**Make in India 2.0**' is now focusing on 27 sectors, which include 15 manufacturing sectors and 12 service sectors.

How was India's Economic Performance in the Services Sector?

- **Context:**
 - The Services Sector in India is **expected to grow at 9.1% in FY23**, compared to 8.4% (YoY) in FY22.
- **Performance:**
 - **Robust expansion in PMI (Purchasing Managers' Index) services** has been observed since July 2022.
 - India was **among the top ten services exporting countries** in 2021, with a **share of 4%** in world commercial services exports.
 - **India's services sector has been resilient** even throughout the Covid-19 pandemic and amid geopolitical uncertainties due to **higher demand for digital support, cloud services, and infrastructure modernization**.
 - In the real-estate sector, there was sustained growth, leading to pre-pandemic housing sales levels, with a 50% rise between 2021 and 2022.

- In the **tourism sector**, hotel occupancy rate improved from 30-32% in April 2021 to 68-70% in November 2022 showing **signs of revival with increasing foreign tourist arrivals in FY23**.
- **Digital platforms** are transforming India's financial services; **India's e-commerce market** is projected to grow at 18% annually through 2025.

How was India's Economic Performance in the External Sector?

- **Context:**
 - Owing to the recent geopolitical developments, India's external sector has been facing considerable global headwinds.
 - However, India has diversified its markets and **increased its exports to Brazil, South Africa and Saudi Arabia**.
- **Performance:**
 - India's **current account balance (CAB)** recorded a **deficit of US\$ 36.4 billion (4.4% of GDP)** in the **second quarter (Q2) of FY23** in contrast to a deficit of US\$ 9.7 billion (**1.3% of GDP**) in Q2 of FY22.
 - This was **mainly due to a higher merchandise trade deficit of US\$ 83.5 billion and an increase in net investment income outgo**.
 - To increase its market size and ensure better penetration, in 2022, India signed **CEPA with UAE** and **ECTA with Australia**.
 - **India is the largest recipient of remittances** in the world receiving US\$ 100 bn in 2022.
 - Remittances are the **second largest source of external financing** after service export.
 - As of December 2022, **India's Forex Reserves stood at US\$ 563 bn** covering 9.3 months of imports (this is a **decline from 13 months of imports** in FY 21-22).
 - Despite this, India was the **6th largest foreign exchange reserves holder** in the world.

How was India's Economic Performance in the Digital Public Infrastructure?

- **Context:**
 - India's Digital Public Infrastructure (DPI) can add around 60-100 basis points (BPS) to India's potential GDP growth rate.

Note:

- In the immediate future, platforms such as **Open Network for Digital Commerce (ONDC)**, **Open Credit Enablement Network (OCEN)** will open avenues for e-commerce market access and credit availability for smaller businesses and strengthen the expected economic growth.
- **Performance:**
 - **Unified Payment Interface (UPI):**
 - **UPI**-based transactions grew in both value (121%) and volume (115%), between 2019-22, paving the way for its **international adoption**.
 - **Telephone and Radio - For Digital Empowerment:**
 - Total **telephone subscriber base in India** stands at 117.8 crore (as of Sept,22), with **44.3% of subscribers in rural India**.
 - **More than 98%** of the total telephone subscribers are **connected wirelessly**.
 - As of March 2022, India's **overall teledensity** (number of telephone connections per 100 people) in India **stood at 84.8%**.
- Economic Survey states that a landmark achievement in telecommunications in India was the **launch of 5G services**.
 - The **Indian Telegraph Right of Way (Amendment) Rules, 2022**, will facilitate faster and easier deployment of telegraph infrastructure to **enable speedy 5G rollout**.
- **Prasar Bharati, India's autonomous public service broadcaster**, broadcasts in 23 languages, 179 dialects from 479 stations and reaches 92% of India's total area and 99.1% of the total population.
- **Digital Public Goods:**
 - Schemes like **MyScheme, TrEDS, GEM, e-NAM, UMANG** have transformed India's market place and has enabled citizens to access services across sectors.
 - **Open Credit Enablement Network** aims towards democratising lending operations while allowing end-to-end digital loan applications.
 - **National AI portal** has published 1520 articles, 262 videos, and 120 government initiatives and '**Bhashini**' is being viewed as a tool for overcoming the language barrier.
 - The bouquet of digital public infrastructure products like **e-RUPI, e-Way Bill** etc. have **ensured real value for money to consumers** while reducing the compliance burden for producers.

Union Budget 2023-24

Why in News?

The Finance Minister of India introduced the **last full-fledged Union Budget** (for 2023-24) **before the Lok Sabha elections of 2024**.

What are the Constitutional Provisions regarding Budget?

- According to **Article 112 of the Indian Constitution**, the Union Budget of a year is referred to as the **Annual Financial Statement (AFS)**.
 - It is a statement of the **estimated receipts and expenditure of the Government in a Financial Year** (which begins on 1st April of the current year and ends on 31st March of the following year).
- Overall, the Budget contains:
 - Estimates of **revenue and capital receipts**,
 - Ways and means to raise the **revenue**,
 - Estimates of **expenditure**,
 - Details of the **actual receipts and expenditure of the closing financial year** and the **reasons for any deficit/surplus in that year**, and
 - The **economic and financial policy of the coming year**, i.e., taxation proposals, prospects of revenue, spending programme and introduction of new schemes/projects.
- In Parliament, the Budget goes through **six stages**:
 - **Presentation** of Budget
 - General **discussion**
 - **Scrutiny** by Departmental Committees
 - **Voting** on Demands for Grants
 - Passing an **Appropriation Bill**
 - Passing of **Finance Bill**
- The **Budget Division of the Department of Economic Affairs** in the Ministry of Finance is the **nodal body** responsible for preparing the Budget.
 - The **first Budget of Independent India** was presented in **1947**.

What are the Highlights of Budget 2023-24?

- A key theme of Union Budget 2023-24 is the focus on inclusive development - **Sabka Sath, Sabka Vikas** which specifically covers:

Note:

- Farmers, Women, Youth, Scheduled Castes, Scheduled Tribes, Other Backward Classes (OBCs), Divyangjan (PwDs) and Economically Weaker Sections (EWS), Overall **priority for the underprivileged** (vanchiton ko varyyata),
- There has also been a sustained focus on **UTs of J&K and Ladakh** and the **Northeast Region (NER)**.
- The Budget is along the lines of the **two-pronged growth strategy** first unveiled in 2019:
 - **Incentivising the private sector** thus creating jobs and pushing growth.
 - **‘Minimum Government, Maximum Governance’**; increasing capex and raising more revenues via **disinvestment**.
- **Key Takeaways of the Budget:**
 - Changes in the **new income tax regime** (in rebate limit and in tax slabs).
 - A **33% increase in capital investment outlay** has been proposed, raising it to Rs 10 lakh crore (the **biggest in the past decade**).
 - **Changes in customs duty**; **reduced on** import of certain inputs for mobile phone manufacturing, shrimp feed etc. and **increased on** cigarettes, gold articles, compounded rubber etc.
 - **Capital outlay for the railways increased to the highest ever** – Rs 2.40 lakh crore.

Part – A

What is the Budget’s Vision for Amrit Kaal?

- **Amrit Kaal:**
 - The Finance Minister of India called it the **first Budget in Amrit Kaal**. The vision for the Amrit Kaal is an **empowered and inclusive economy** that is **technology-driven and knowledge-based** with a **robust financial sector**.

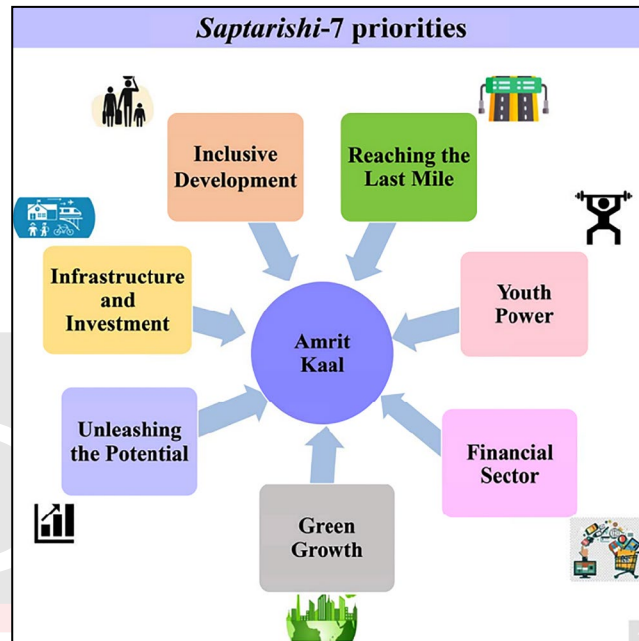


- **The Budget identifies 4 transformative opportunities to be leveraged before reaching India@100:**

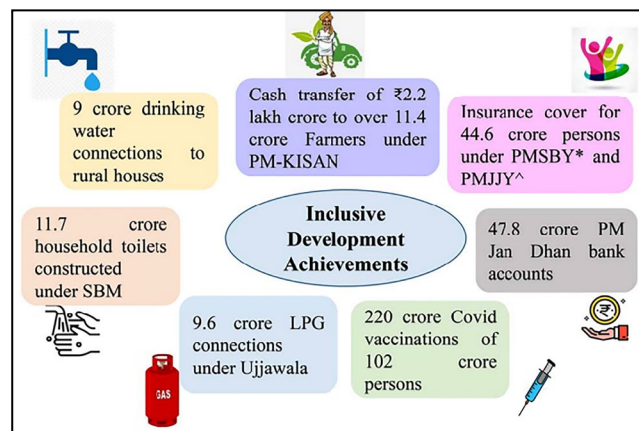
- Economic Empowerment of Women through SHGs
- PM Vishwakarma KAushal Samman (PM VIKAS)
- Tourism Promotion in Mission Mode
- Green Growth

What are the Priorities of Budget 2023-24?

➤ **Saptarishi:**



Priority 1: Inclusive Development



➤ **Agriculture:**

- **Digital Public Infrastructure:** Digital Public Infrastructure for agriculture will be built as an open source, open standard and interoperable public good resulting in:
 - Inclusive farmer-centric solutions


Note:

- Relevant information services for **crop planning/ health**
- Better access to **farm inputs, credit, and insurance**
- Growth-support of the **agri-tech industry and start-ups**
- **Funding for Agri-startups: Agriculture Accelerator Fund** will be set-up to **encourage agri-startups by young entrepreneurs** in rural areas.
- **Agri-Credit:** Agriculture credit target to be **increased to Rs 20 lakh crore** with **focus on animal husbandry, dairy and fisheries**.
 - A new **sub-scheme of PM Matsya Sampada Yojana** with targeted investment of Rs 6,000 crore to be launched for fishermen, fish vendors and MSMEs.
- **Horticulture: Atmanirbhar Clean Plant Programme** will be launched to boost availability of disease-free, quality planting material for **high value horticultural crops at an outlay of Rs 2,200 crore**.
- **Millets:** To make India a global hub for **'Shree Anna' (Millets)**, the **Indian Institute of Millet Research, Hyderabad** will be supported as the **Centre of Excellence** for sharing best practices, research and technologies at the international level.
- **Agri-Cooperatives:** To fulfil the vision of **"Sahakar Se Samridhi"**, the Government plans to establish decentralized storage capacity and set up **multiple cooperative societies in uncovered villages** over the next 5 years.

➤ Education and Skilling:

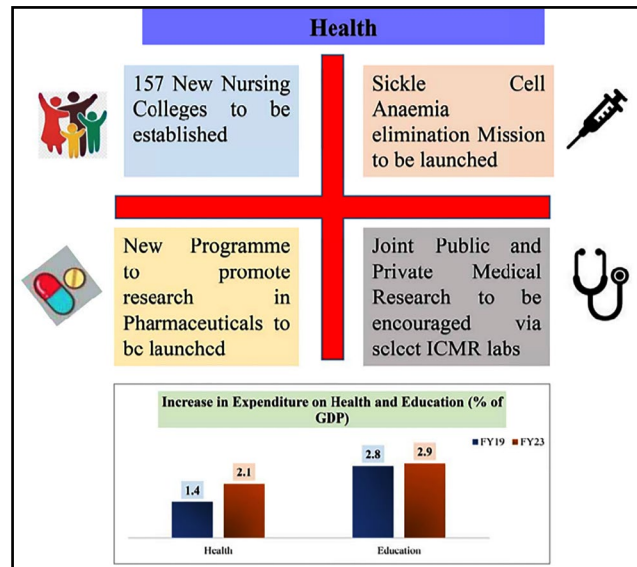
Education and Skilling

- ✓ Revamped Teachers' training via **District Institutes of Education and Training**
- ✓ **National Digital Library** to be set up for children and adolescents
- ✓ States will be encouraged to set up physical libraries at Panchayat and ward levels



➤ Health:

- **157 new nursing colleges will be established** in co-location with the existing 157 medical colleges established since 2014.
- A Mission to **eliminate Sickle Cell Anaemia by 2047** will be launched.



Priority 2: Reaching the Last Mile

➤ New 'Aspirational Blocks Programme':

- Building on the success of the **Aspirational Districts Programme**, the **Aspirational Blocks Programme** was recently launched covering **500 blocks**.
- It is aimed at improving the performance of areas across multiple domains such as **health, nutrition, education, agriculture, water resources, financial inclusion, skill development, and basic infrastructure**.

➤ PM PVTG Development Mission:

- To improve socio-economic conditions of the **Particularly Vulnerable Tribal Groups (PVTGs)**, **Pradhan Mantri PVTG Development Mission** will be launched.
- An amount of **Rs 15,000 crore** will be made available to implement the Mission in the next 3 years under the **Development Action Plan for the Scheduled Tribes**.
- The Centre will also **recruit 38,800 teachers and support staff** for the 740 **Eklavya Model Residential Schools**, serving 3.5 lakh tribal students.

➤ Water for Drought Prone Region:

- In the **drought prone central region of Karnataka**, central assistance of **Rs 5,300 crore** will be given to the **Upper Bhadra Project** to provide sustainable micro irrigation and filling up of surface tanks for drinking water.

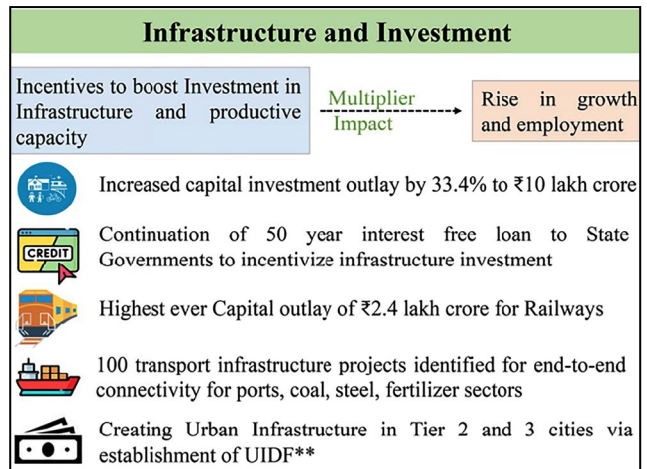
➤ Other Initiatives:

Note:

- The **outlay for PM Awas Yojana** is being enhanced by **66%** to over Rs 79,000 crore.
- A '**Bharat Shared Repository of Inscriptions (Bharat SHRI)**' will be set up in a digital epigraphy museum, with **digitization of 1 lakh ancient inscriptions** in the first stage.

Priority 3: Infrastructure and Investment

- **Increase in Capex for Infra:**
 - Capital investment outlay increased for the third consecutive year - by **33% to Rs 10 lakh crore** making it **3.3% of GDP**.
 - The '**Effective Capital Expenditure**' is budgeted at Rs 13.7 lakh crore - **4.5% of GDP**.
- **Support to State Govts for Cap-Investment:**
 - The Government has decided to **continue the 50-year interest free loan to state governments for one more year** to spur investment in infrastructure and to incentivize them for complementary policy actions.
 - The enhanced **outlay for this is Rs 1.3 lakh crore**.
- **Railways:**
 - A capital outlay of **Rs 2.40 lakh crore** has been provided for the **Railways** - the highest ever outlay and about 9 times the outlay made in 2013- 14.
- **Aviation:**
 - **50 additional airports, heliports, water aerodromes and advanced landing grounds** will be revived for improving regional air connectivity.
- **Other Transportation Projects:**
 - **100 critical transport infrastructure projects**, for last and first mile connectivity for ports, coal, steel, fertiliser, and food grains sectors have been identified and **will be taken up on priority with investment of Rs 75,000 crore**, including **Rs 15,000 crore from private sources**.
 - An **Urban Infrastructure Development Fund (UIDF)** will be established through use of **priority sector lending shortfall**.
 - UIDF will be managed by the **National Housing Bank**, and will be used by public agencies to **create urban infrastructure in Tier 2 and Tier 3 cities**.
 - **Rs 10,000 crore on a yearly basis** will be allocated for this purpose.



Priority 4: Unleashing the Potential

- **Reduced Compliances and Jan Vishwas Bill:**
 - To enhance ease of doing business, more than **39,000 compliances have been reduced** and **more than 3,400 legal provisions have been decriminalised** under the **amendments to the Companies Act 2013**.
 - To further the trust-based governance, the Government introduced the **Jan Vishwas Bill** to amend 42 Central Acts.
- **Centres of Excellence for AI:**
 - To realise the vision of "**Make AI in India and Make AI work for India**", three **centres of excellence for Artificial Intelligence** will be set-up in top educational institutions.
 - **National Data Governance Policy:**
 - To **facilitate innovation and research by start-ups and academia**, a **National Data Governance Policy** will be brought out, which will enable **access to anonymized data**.
- **Digilocker for Data Sharing:**
 - An **Entity DigiLocker** will be set up for use by **MSMEs**, large business and charitable trusts for **storing and sharing documents online securely**, whenever needed, with various authorities, regulators, banks and other business entities.
- **Resolving Disputes:**
 - **Vivad se Vishwas: Less stringent contract execution** for MSMEs (being provided as a relief to the MSMEs affected during the Covid period).
 - **Easier and standardised settlement scheme** enabling **faster settlement of contractual disputes** of Govt and Govt undertakings.

Note:

- **e-Courts: Phase III of e-courts** will be launched for effective administration of justice.
- **5G Technology:**
 - **100 labs for developing applications using 5G services** will be set up in engineering institutions to realise a new range of opportunities, business models, and employment potential.
 - The labs will cover, among others, applications such as **smart classrooms, precision farming, intelligent transport systems, and healthcare apps.**

Priority 5: Green Growth



- **National Green Hydrogen Mission:**
 - An outlay of Rs 19,700 crores has been allocated to the **National Green Hydrogen Mission** to facilitate transition of the economy to **low carbon intensity, reduce dependence on fossil fuel imports, and make the country assume technology and market leadership** in this sunrise sector.
 - The target is to reach an annual production of 5 MMT by 2030.
- **GOBARdhan Scheme:**
 - **500 new 'waste to wealth' plants under GOBARdhan scheme** will be established to promote **Circular Economy (200 compressed biogas (CBG) plants and 300 community/cluster-based plants)**. Total Investment - Rs 10,000 crore.
 - In due course, a **5% CBG mandate** will be introduced for all organizations marketing natural and biogas.
- **Bhartiya Prakritik Kheti Bio-Input Resource Centres:**
 - Over the next 3 years, the Centre will facilitate **1 crore farmers to adopt natural farming** by setting up **10,000 Bio-Input Resource Centres**, creating a national-level distributed **micro-fertilizer and pesticide manufacturing network.**

- **Other Investments in Green Energy:**
 - **Rs. 35,000 crore** for **priority capital investments towards energy transition and net zero objectives**, and energy security (Ministry of Petroleum & Natural Gas).
 - **Battery Energy Storage Systems** with capacity of 4,000 MWH to be supported with **Viability Gap Funding.**
 - **Rs 20,700 crore** (central support - Rs 8,300 crore) for **inter-state transmission system** for evacuation and **grid integration** of 13 GW renewable energy from Ladakh.

Priority 6: Youth Power

Youth Power

Empowering 'Amrit Peedhi'

- **Pradhan Mantri Kaushal Vikas Yojana 4.0**
 - On-job training, industry partnership, new age courses like AI, robotics, mechatronics, 3D printing, drones, etc
- **Skill India Digital Platform**
 - Expanding digital ecosystem to enable demand-based formal skilling, linking with employers and facilitating access to entrepreneurship schemes

Youth Power

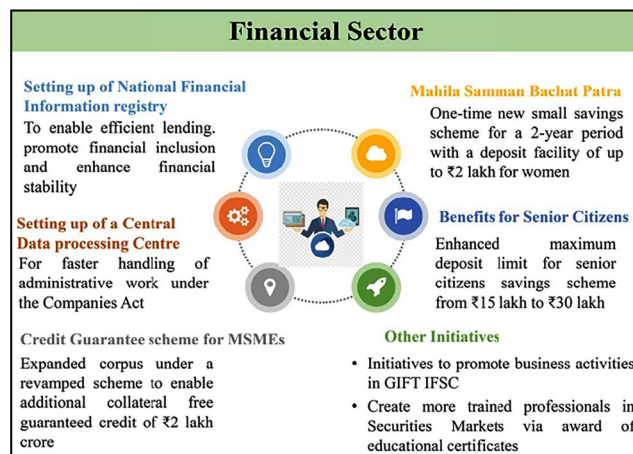
Empowering 'Amrit Peedhi'

- **National Apprenticeship Promotion Scheme**
 - To provide stipend support to 47 lakh youth in three years
- **Boosting Tourism**
 - 50 destinations to be selected and developed as complete package for domestic & foreign tourists
- **Setting Up Of Unity Malls In State Capitals**
 - For promotion and sale of ODOPs (One District, One Product), GI and handicraft products

Note:

Priority 7: Financial Sector

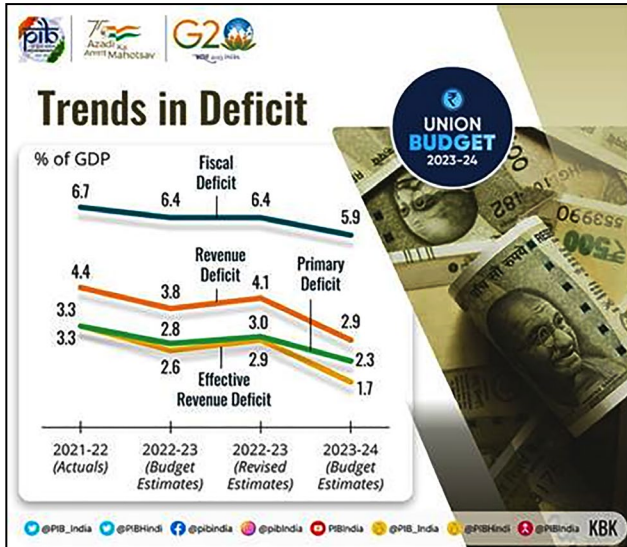
- **Credit Guarantee for MSMEs:**
 - In 2022, the **credit guarantee scheme for MSMEs** was revamped and will take effect from 1st April 2023 through **infusion of Rs 9,000 crore** in the corpus.
 - This will enable **additional collateral-free guaranteed credit of Rs 2 lakh crore**.
 - The **cost of the credit** will be **reduced** by about **1%**.
- **Financial Information Registry:**
 - A National Financial Information Registry will be set up to **serve as the central repository of financial and ancillary information**.
 - This will facilitate efficient flow of credit, promote financial inclusion, and foster financial stability.
 - A **new legislative framework, designed in consultation with the RBI**, will govern this credit public infrastructure.
- **Small Savings Schemes:**
 - To commemorate Azadi Ka Amrit Mahotsav, a **one-time new small savings scheme, Mahila Samman Savings Certificate**, will be made available for a **two-year period up to March 2025**.
 - This will offer **deposit facility upto Rs 2 lakh in the name of women** or girls (fixed interest rate of **7.5%**) with **partial withdrawal option**.
 - The **maximum deposit limit for Senior Citizen Savings Scheme** will be **enhanced from Rs 15 lakh to Rs 30 lakh**.
 - The maximum deposit limit for the **Monthly Income Account Scheme** will be **enhanced from Rs 4.5 lakh to Rs 9 lakh (for single account) and from Rs 9 lakh to Rs 15 lakh (for joint account)**.



What is the Status of Fiscal Management?

- **Utilisation of Funds for Capital Expenditure:**
 - The **Indian Finance Minister** stated that **all states must utilise their fifty-year loan for capital expenses** by the end of **2023-24**.
 - Most of this will be at the discretion of states, but a part will be conditional on states designated for specific purposes, such as:
 - Replacing outdated **government vehicles**
 - Improving **urban planning**
 - Making **urban local bodies eligible for obtaining municipal bonds**
 - Building housing for police officers
 - **Constructing Unity Malls**
 - **Creating libraries and digital infrastructure for children** and adolescents
 - Contributing to the **capital expenses of central schemes**.
- **Fiscal Deficit Allowed to States:**
 - States are allowed to have a deficit of **3.5% of their Gross State Domestic Product (GSDP)**, with **0.5%** of this amount specifically designated for **power sector reforms**.
- **Revised Estimates 2022-23:**
 - **Total receipts**, (excluding borrowings): **Rs 24.3 lakh crore**
 - **Net tax receipt**: **Rs 20.9 lakh crore**.
 - **Total expenditure**: **Rs 41.9 lakh crore**
 - **Capital expenditure**: **Rs 7.3 lakh crore**.
 - **Fiscal deficit** : **6.4%** of GDP.
- **Budget Estimates 2023-24:**
 - **Total estimated receipts** (excluding borrowings): **Rs 27.2 lakh crore**,
 - **Total estimated expenditure**: **Rs 45 lakh crore**.
 - **Net tax receipts**: **Rs 23.3 lakh crore**.
 - **Fiscal deficit**: **5.9%** of GDP.
 - To **finance the fiscal deficit in 2023-24**, the net market borrowings from dated securities are estimated at **Rs 11.8 lakh crore**.
 - The **gross market borrowings** are estimated at **Rs 15.4 lakh crore**.
 - Also, the government is committed to sticking to this plan to **reduce the fiscal deficit to below 4.5% by 2025-26**.

Note:



Part – B

What are the Reforms Proposed in Direct Taxation?

➤ Personal Income Tax:

- There are five major announcements relating to the personal income tax. The **rebate limit in the new tax regime has been increased to ₹ 7 lakh.**
- It means that persons in the new tax regime with **income up to ₹ 7 lakh will not have to pay any tax.**
- The tax structure in the new personal tax regime has been changed by **reducing the number of slabs to five and increasing the tax exemption limit to ₹ 3 lakh.**

➤ Other Tax Reforms:

○ Standard Deduction:

- The new tax regime has proposed to **increase the standard deduction for salaried individuals to 50,000 rupees** and the deduction for family pension up to **15,000 rupees.**

○ MSMEs:

- The limits for **presumptive taxation have been increased for micro enterprises and certain professionals** as long as the amount received in cash does not exceed **5% of the total gross receipts/turnover.**
- The **deduction for payments made to MSMEs** will only be allowed when payment is actually made to support their timely receipt of payments.

○ Cooperatives:

- New **manufacturing co-operatives** that start manufacturing before 31.3.2024 will have a **lower tax rate of 15%.**
- The limit for cash deposits and loans by **Primary Agricultural Co-operative Societies and Primary Co-operative Agriculture and Rural Development Banks** has been increased to **2 lakh rupees per member.**
- **Tax Deduction at Source (TDS)** on cash withdrawals for co-operative societies has been increased to **3 crore rupees.**

○ Startups:

- The date for **start-ups** to receive income tax benefits has been **extended to 31.3.2024.** The carry forward of losses for start-ups has been increased from **7 years of incorporation to 10 years.**

○ Online Gaming:

- **Taxability on online gaming** will be clarified with TDS and taxability on **net winnings at the time of withdrawal** or at the end of the financial year.

○ Gold:

- **Conversion of gold** into electronic gold receipt and vice versa will **not be treated as capital gains.**

➤ Exception from Income Tax:

- **Income of authorities, boards and commissions set up by Union or State laws** for housing, town and village development, and regulation, will be **exempt from income tax.**
- **Agniveer Fund** has been given **Exempt-Exempt-Exempt (EEE) status.** Payments received by Agniveers enrolled in Agneepath Scheme, 2022 will be **exempt from taxes.**
- Deduction in total income will be allowed for **contributions to the Agniveer Seva Nidhi** account by the Agniveer or the Central Government.

➤ Common IT Return Form:

- To improve taxpayer services, the government **rolled out a proposal for next-generation Common IT Return Form** for taxpayer convenience, along with plans to strengthen the grievance redressal mechanism.

➤ Current and Proposed Tax Slabs:

Note:

Tax Rate	Current Income Slab	Proposed Income Slab
Nil	Up to Rs 2.5 lakh	Up to Rs 3 lakh
5%	Rs 2.5 lakh to Rs 5 lakh	Rs 3 lakh to Rs 6 lakh
10%	Rs 5 lakh to Rs 7.5 lakh	Rs 6 lakh to Rs 9 lakh
15%	Rs 7.5 lakh to Rs 10 lakh	Rs 9 lakh to Rs 12 lakh
20%	Rs 10 lakh to Rs 12 lakh	Rs 12 lakh to Rs 15 lakh
25%	Rs 12 lakh to Rs 15 lakh	-
30%	Above Rs 15 lakh	Above Rs 15 lakh

What are the Reforms Proposed in Indirect Taxation?

- **Custom Duties:**
 - The number of **basic customs duty rates** for goods **other than textiles and agriculture** has been decreased to **13 from 21**.
 - **National Calamity Contingent Duty (NCCD)** on specified **cigarettes** revised upwards by about **16%**
- **Increased Duties:**
 - Articles made from gold and platinum
 - Import duties on silver dore, bars, and articles
- **Exception from Duties:**
 - **Compressed biogas** contained in blended compressed natural gas.
 - Testing agencies that import **vehicles, automobile parts/components, sub-systems, and tires** for testing and/or certification purposes.
 - Also, the **deadline for the customs duty on specified machinery for lithium-ion cell manufacturing for EV batteries** has been extended to 31.03.2024.
 - **Denatured ethyl alcohol** used in the chemical industry.
- **Legislative Changes in Customs Laws:**
 - The **Customs Act, 1962** is going to be revised to set a **nine-month deadline for the Settlement Commission** to make a final decision after an application has been filed.
 - The **Customs Tariff Act** will be revised to make the purpose and scope of **Anti-Dumping Duty (ADD), Countervailing Duty (CVD), and Safeguard Measures** clearer.
 - Changes will also be made to the **Central Goods and Service Tax Act:**
 - The minimum amount of tax for starting a **prosecution under GST will be raised from 1 crore to 2 crore**.

- The **compounding amount for tax will be reduced from 50-150% to 25-100%** of the tax amount.
- Certain offences will be decriminalised.
- The **filing of returns or statements will be limited to a maximum of three years** from the due date.
- Unregistered suppliers and composition taxpayers will be allowed to make **intra-state supply of goods through E-Commerce Operators (ECOs)**.

Indirect Tax Proposals

UNION BUDGET 2023-24

- ⊙ **Green Mobility:**
 - To exempt excise duty on GST-paid compressed bio gas
- ⊙ **Electronics:**
 - To provide relief in customs duty on import of certain parts of mobile phones
 - To reduce basic customs duty on parts of open cells of TV panels to 2.5%
- ⊙ **Electricals:**
 - To increase basic customs duty on electric kitchen chimney from 7.5% to 15%
 - To reduce basic customs duty on chimney heat coils from 20% to 15%
- ⊙ **Chemicals and Petrochemicals:**
 - To exempt basic customs duty on chemicals and petrochemicals
 - To reduce basic customs duty on acid grade fluorspar and crude glycerine to 2.5%

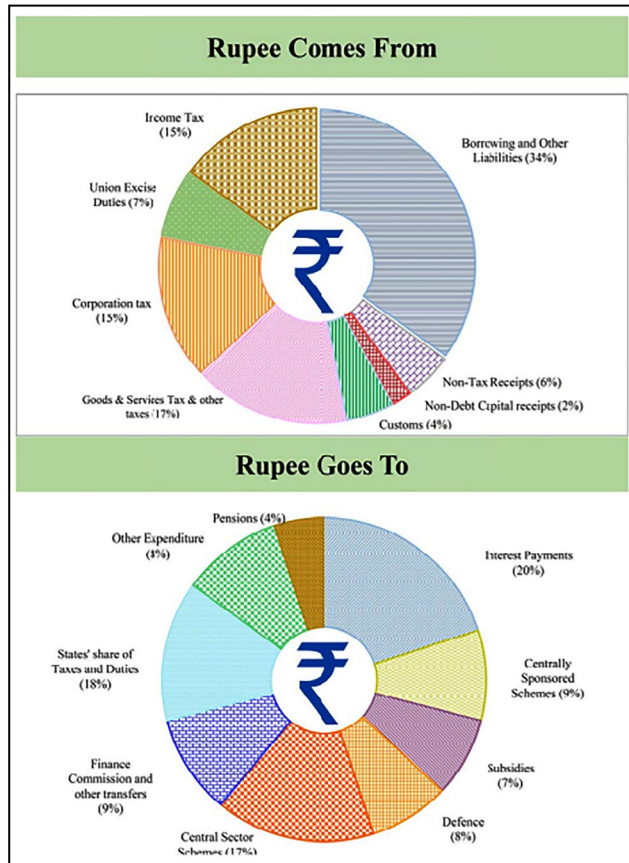
Indirect Tax Proposals

UNION BUDGET 2023-24

- ⊙ **Marine products:**
 - To reduce duty on key inputs for domestic manufacture of shrimp feed
- ⊙ **Lab Grown Diamonds:**
 - To reduce basic customs duty on seeds used in their manufacturing
- ⊙ **Precious Metals:**
 - To increase customs duties on articles made from gold and platinum
 - To increase import duty on silver dore, bars and articles
- ⊙ **Compounded Rubber:**
 - To increase basic customs duty rate on compounded rubber from 10% to 25%
- ⊙ **Cigarettes:**
 - National Calamity Contingent Duty (NCCD) on specified cigarettes to be revised upwards by about 16%

Note:

Where does the Rupee Come from and where does it Go?



New Tax Regime

Why in News?

Recently, during the **Union Budget 2023-24** speech, Union Finance Minister announced a **change in income tax slabs and rebate limits** under the new income tax regime.

- According to the proposed 2023 Finance Bill, **startups that offer their shares to foreign investors may be subject to paying the "angel tax,"** which was previously only applicable to investments raised by Indian residents.

What are the Proposed Changes?

- **Tax Rebate Limit Raised:**
 - The enhancement of this limit to ₹7 lakhs from ₹5 lakhs indicates that the **person whose income is less than ₹7 lakhs need not invest anything to**

claim exemptions and the entire income would be tax-free irrespective of the quantum of investment made by such an individual.

- This **will result in giving more consumption power to the middle-class income group** as they could spend the entire amount of income without bothering too much about investment schemes to take the benefit of exemptions.

➤ Changes in Income Tax slabs:

BENEFITS UNDER THE NEW TAX REGIME				
FY'23	Tax rate	FY'24	Tax rate	Cumulative benefit
Rs 2.5 lakh	Nil	Up to 3 lakh	Nil	₹ 2,500
Rs 2.5-5 lakh	5%	₹ 3-6 lakh	5%	₹ 7,500
Rs 5-7.5 lakh	10%	₹ 6-9 lakh	10%	₹ 15,000
Rs 7.5 to 10 lakh	15%	₹ 9-12 lakh	15%	₹ 25,000
Rs 10-12.5 lakh	20%	₹ 12-15 lakh	20%	₹ 37,500
Rs 12.5-15 lakh	25%	NA	NA	N.A
Above Rs 15 lakh	30%	Above ₹ 15 lakh	30%	₹ 37,500

Standard deduction benefit has also been extended to new tax regime

- It was proposed to change the tax structure in the new regime **by reducing the number of slabs to five from six income categories and increasing the tax exemption limit to ₹3 lakh.**
- Tax assessors will still be **able to choose from the prior regime.**
 - **Salaried and Pensioners:** The new system's standard deduction for taxable income exceeding Rs15.5 lakhs is ₹52,500.
- **For Pensioners:**
 - The Finance Minister **announced extending the benefit of the standard deduction to the new tax regime.**
 - Each salaried person with an income of ₹15.5 lakh or more will benefit by ₹52,500.
- **Maximum Tax Along with Surcharge:**
 - It was **proposed to reduce the highest surcharge rate** from 37% to 25% in the new tax regime. This **would result in the reduction of the maximum tax rate to 39%.**
 - The highest tax rate in India is 42.74%. **This is among the highest in the world.**
 - Tax rates have been reduced under the new tax regime and the **maximum marginal rate drops from 42.74% to 39%.**
- **Finance Bill, 2023:**
 - The Finance Bill, 2023 was also unveiled which has **proposed to amend Section 56(2) VII B of the Income Tax Act.**

Note:

- The provision states that when an unlisted company, such as **start-ups** receive equity investment for the issue of shares exceeding their face value, it will be **considered income for the start-up and be subject to income tax under the heading "Income from other Sources"**.
- **Section 56(2) VII B of the Income Tax Act**, colloquially known as the 'angel tax' was first **introduced in 2012** to deter the generation and use of unaccounted money through the subscription of shares of a closely held company at a value that is higher than the fair market value of the firm's shares.
- It was also proposed to **include foreign investors also**, meaning that when a start-up raises funding from a foreign investor, that too will now be **counted as income and be taxable**.

Why are Startups Concerned?

- Foreign investors are a **significant source of funding for startups** and have contributed to their increased valuations and the proposed amendments can affect the amount of investment.
 - **According to a report by PwC India**, the funding for India's startups **decreased by 33% to \$24 billion in 2022**.
- The reintroduction of the tax on angel investors in India may **cause startups to shift abroad**, as foreign investors may **not want to pay additional taxes associated with their investment in the startup**.

What is Face Value?

- According to the face value definition, it is the dollar value of any stock (or any financial instrument) at the time of issuing. It is also **termed as the nominal value or the dollar value**.
 - **Face Value= Equity share capital/ number of outstanding shares**.

India's Fiscal Deficit Targets

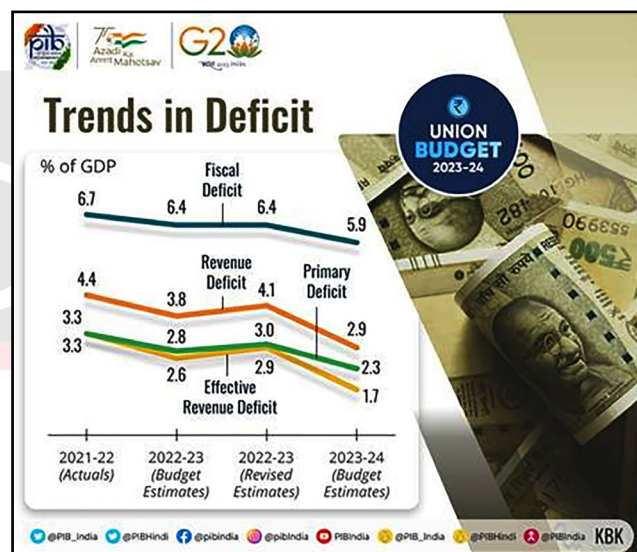
Why in News?

In the **Union Budget for 2023-24**, the government announced the adoption of **relative fiscal prudence and projected a decline in fiscal deficit to 5.9%** of gross domestic product (GDP) in FY24, compared with **6.4%** in FY23.

- The government planned to continue on the path of **fiscal consolidation** and reach a **fiscal deficit below 4.5% by 2025-26**.

What is the Direction on Deficit Given in the Budget?

- In the revenue budget, the deficit was **4.1% of GDP in 2022-23** (revised estimate). In **Union Budget 2023-24**, revenue deficit is **2.9% of GDP**.
- If interest payments are deducted from fiscal deficit, which is referred to as **primary deficit**, it stood at **3% of GDP in 2022-23** (RE).
- The primary deficit, which reflects the current fiscal stance devoid of past interest payment liabilities, is pegged at **2.3% of GDP in Union Budget 2023-24**.



What are the Major Steps of Government Towards Fiscal Consolidation?

- **Reduced Subsidies:**
 - The government has reduced the amount of money allocated for **food, fertiliser and petroleum subsidies**.
 - The food subsidy in 2022-23 (RE) was ₹2,87,194 crore. In 2023-24, it has been reduced to ₹1,97,350 crore.
 - Similarly, the fertilizer subsidy in 2022-23 was ₹2,25,220 crore (RE); it has been reduced to ₹1,75,100 crore for FY24.
 - The petroleum subsidy in 2022-23 was ₹9,171 crore (RE); it has declined to ₹2,257 crore in 2023-24 (Budget estimate/BE).

Note:

- The decrease in subsidies compared to the previous year is not as sharp, but it is **still a positive step towards reaching a fiscal deficit target of 4.5%** by 2025-26.
- **Capital Expenditure:**
 - In the Budget for 2023-24, **capital spending is planned to rise to 3.3% of GDP**, and the government has provided an **interest-free loan of ₹1.3 lakh crore for 50 years to states to boost growth**.
- **Debt Management:**
 - The **majority of the fiscal deficit is financed through internal market borrowings**, with a small portion coming from securities against savings, provident funds, and external debt.
 - In the 2023 Union Budget, **India's external debt is only 1% of the total fiscal deficit**, which is estimated at ₹22,118 crore.
 - The states are free to maintain a fiscal deficit of **3.5% of their Gross State Domestic Product (GSDP)** with **0.5% tied to power sector reforms**.

Why is Fiscal Consolidation Important for an Emerging Economy?

- Fiscal consolidation refers to the **ways and means of narrowing the fiscal deficit**. A government **typically borrows to bridge the deficit**. It will then have to allocate a part of its earnings to service the debt.
- The **interest burden will increase as the debt increases**. In the Budget for FY22, of the **total government expenditure of over ₹34.83 lakh crore**, more than **8.09 lakh crore (around 20%) went towards interest payment**.

What is Fiscal Deficit?

- **About:**
 - Fiscal deficit is the difference between **the government's total expenditure and its total revenue (excluding borrowings)**.
 - It is an indicator of the extent to which the **government must borrow in order to finance its operations** and is expressed as a percentage of the country's **Gross Domestic Product (GDP)**.
 - A **high fiscal deficit can lead to inflation, devaluation of the currency** and an increase in the debt burden.
 - While a **lower fiscal deficit is seen as a positive sign** of fiscal discipline and a healthy economy.

- **Positive Aspects of Fiscal Deficit:**
 - **Increased Government Spending:** Fiscal deficit enables the government to increase spending on **public services, infrastructure**, and other important areas that can stimulate economic growth.
 - **Finances Public Investments:** The government can finance long-term investments, such as **infrastructure projects**, through fiscal deficit.
 - **Job Creation:** Increased government spending can lead to job creation, which can help **reduce unemployment and increase the standard of living**.
- **Negative Aspects of Fiscal Deficit:**
 - **Increased Debt Burden:** A persistent high fiscal deficit leads to an **increase in government debt**, which puts pressure on future generations to repay the debt.
 - **Inflationary Pressure:** Large fiscal deficits can lead to an increase in money supply and higher inflation, which **reduces the purchasing power of the general public**.
 - **Crowding out of Private Investment:** The government may have to borrow heavily to **finance the fiscal deficit**, which can lead to a rise in interest rates, and make it difficult for the private sector to access credit, thus crowding out private investment.
 - **Balance of Payments Problems:** If a country is running large fiscal deficits, it may have to borrow from foreign sources, which can lead to a decrease in foreign exchange reserves and put **pressure on the balance of payments**.

What are the Other Types of Deficits in India?

- **Revenue Deficit:** It refers to the excess of government's revenue expenditure over revenue receipts.
 - Revenue Deficit = **Revenue expenditure – Revenue receipts**
- **Primary Deficit:** Primary deficit equals fiscal deficit minus interest payments. This indicates the gap between the government's expenditure requirements and its receipts, not taking into account the expenditure incurred on interest payments on loans taken during the previous years.
 - Primary deficit = **Fiscal deficit – Interest payments**
- **Effective Revenue Deficit:** It is the **difference between revenue deficit and grants for creation of capital assets**.
 - The concept of effective revenue deficit has been suggested by the **Rangarajan Committee on Public Expenditure**.

Note:

Status and Proceeds of Disinvestment

Why in News?

In the **Union Budget 2023-24**, the government has set a **disinvestment target of Rs 51,000 crore**, down nearly 21% from the budget estimate for the current year and just Rs 1,000 crore more than the revised estimate. It is also the lowest target in seven years.

What is Disinvestment?

➤ About:

- The disinvestment process involves **the sale of government stake in public sector enterprises to strategic or financial buyers**, either through the sale of shares on stock exchanges or through the sale of shares directly to buyers.
- The proceeds from the **disinvestment are used to finance various social and infrastructure projects** and to reduce the government's fiscal deficit.

➤ Approaches:

- **Minority Disinvestment:** The government retains a majority in the company, typically greater than 51%, thus ensuring management control.
- **Majority Divestment:** The government hands over control to the acquiring entity but retains some stake.
- **Complete Privatisation:** 100% control of the company is passed on to the buyer.

➤ Process:

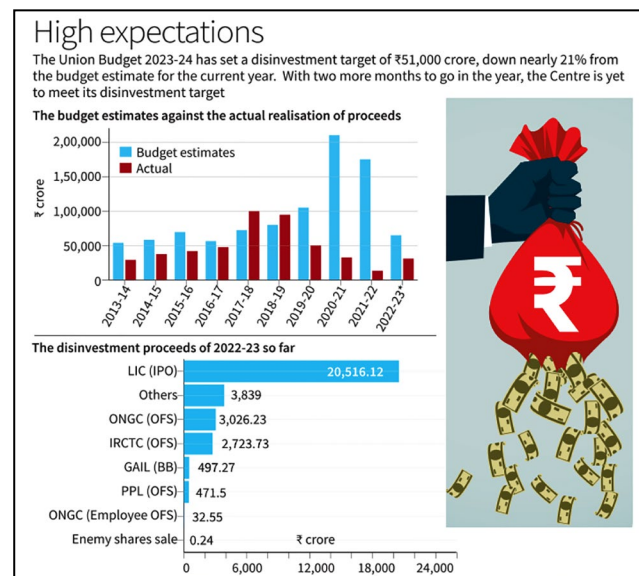
- In India, the disinvestment process is conducted by the **Department of Investment and Public Asset Management (DIPAM)**, which comes under the **Ministry of Finance**.
- The primary objective of DIPAM is **to manage the government's investments in public sector enterprises** and to oversee the disinvestment of government equity in these enterprises.
- Government had constituted the **National Investment Fund (NIF) in 2005** into which the **proceeds from disinvestment of Central Public Sector Enterprises were to be channelized**.

What is the Need for Disinvestment?

- **Reduce the Fiscal Burden:** The government may disinvest in order to reduce the fiscal **burden or bridge the revenue shortfall** for that year.

- It also uses disinvestment proceeds to finance the **fiscal deficit**, to invest in the economy and development or social sector programmes, and to retire government debt.
- **Encourages Private Player:** Disinvestment also encourages private ownership of assets and trading in the open market.
 - Encourage private sector investment in the economy, as **it signals the government's commitment to reforms** and to creating a more conducive business environment.
 - If successful, it also means that the **government does not have to fund the losses of a loss-making unit** anymore.
- **Improves Efficiency:** By divesting from public sector enterprises, the government can **improve the efficiency and competitiveness of these enterprises**, as private sector ownership and management can bring in new ideas and a more market-oriented approach.
- **Better Allocation of Resources:** The government can reallocate the resources freed up through disinvestment **towards other priorities, such as social and infrastructure development**.
- **Increases Transparency:** Disinvestment can bring in greater transparency and accountability in the functioning of public sector enterprises, as **private sector ownership and management can lead to more stringent financial and operational reporting**.

How has Disinvestment Fared in Recent Years?



Note:

- Since 2014, the government has met (and overachieved) its disinvestment targets twice.
 - In 2017-18, the government earned disinvestment receipts of a little over ₹1 lakh crore as against a target of ₹72,500 crore, and in 2018-19, it brought in ₹94,700 crore when the target was set at ₹80,000 crore.
- The Government **has not met the disinvestment target for 2022-23 so far**, having realised Rs 31,106 crore to date, of which, Rs 20,516 crore or close to a third of the budgeted estimate came from the **IPO (Initial Public Offering)** of 3.5% of its shares in the **Life Insurance Corporation (LIC)**.

What is the Disinvestment Plan in 2023-24?

- The Centre is **not going to add new companies to the list of CPSEs** to be divested in 2023-24.
- The government has decided to stick to the already-announced and planned privatisation of State-owned companies.
 - These include IDBI Bank, the Shipping Corporation of India (SCI), the Container Corporation of India Ltd (Concor), NMDC Steel Ltd, BEML, HLL Lifecare, and so on.
 - Incidentally, the disinvestments of Bharat Petroleum Corporation Limited, SCI, and ConCor had been approved by the government in 2019 but have not gone through yet.

What are the Challenges of Disinvestment in India?

- **Political Opposition:** Disinvestment is a politically sensitive issue in India, and the process has often been opposed by political parties and trade unions who are opposed to the sale of public sector enterprises.
- **Valuation Issues:** The valuation of public sector enterprises can be a challenge, as these enterprises may not be able to compete effectively in the market due to their bureaucratic and non-market-oriented structures.
- **Labor Issues:** Disinvestment can also lead to labor-related issues, as workers in public sector enterprises may fear job losses or wage cuts following the sale of these enterprises.
- **Lack of Interest from Buyers:** In some cases, the government may struggle to find buyers for its stakes in public sector enterprises, especially if these enterprises are not performing well financially.

- **Regulatory Challenges:** The process of disinvestment is subject to a range of regulations and approval processes, which can slow down the process and add to its complexity.
- **Legal Challenges:** The process of disinvestment can also be challenged in the courts, as litigants may challenge the validity of the sale or the terms and conditions under which it was conducted.

India Energy Week

Why in News?

On **February 6th, 2023**, Indian Prime Minister (PM) inaugurated the **India Energy Week (IEW) 2023** in **Bengaluru, Karnataka**.

- The PM also launched **E20 fuel at 84 Retail Outlets of Oil Marketing Companies in 11 States/UTs** and flagged off the **Green Mobility Rally** organised by **Hindustan Petroleum Corporation Limited (HPCL)**

What is the E-20 Ethanol Fuel and Green Mobility Rally?

- **E-20 Ethanol Fuel:**

- **About:**

- **Ethanol Blending programme** has been a key focus area of the Government to achieve Atma Nirbharta in the field of energy.
- **E20 is a blend of 20% ethanol with petrol.** The Government aims to achieve a **complete 20% blending of ethanol by 2025**, and HPCL and other oil marketing companies are setting up **2G-3G ethanol plants that will facilitate the progress.**

- **Achievement So Far:**

- Due to the sustained efforts of the Government, Ethanol production capacity has seen six times **increase since 2013-14.**
- The achievements under **Ethanol Blending Program & Biofuels Program** have not only **augmented India's energy security but have also resulted in a host of other benefits** including reduction of **318 Lakh Metric Tonnes of CO₂ emissions** and foreign exchange savings of around Rs 54,000 crore.

- **Green Mobility Rally:**

Note:

- The **Green Mobility Rally's** purpose was to raise public awareness for **green fuels**.
 - It saw the participation of **57 vehicles** running on sustainable energy sources such as **E20, E85, Flex Fuel, Hydrogen, Electric, etc.**
- **Green mobility** refers to the use of **environmentally-friendly and sustainable transportation options** to reduce carbon emissions and preserve natural resources.
- With **proper policy support**, industry action, market generation, increased investor interest and acceptance, India can position itself as a **low-cost, zero-carbon manufacturing hub** in green mobility, at the same time fulfilling its goal of **economic development, job creation, and improved public health**.
- **Other Initiatives:**
 - The PM also launched the **uniforms under the 'Unbottled' initiative of Indian Oil**. These uniforms are made of **recycled PET bottles**.
 - The PM also dedicated the **twin-cooktop model of the Indian Oil's Indoor Solar Cooking System** and flagged off its commercial roll-out.

Green Energy and Jobs

Why in News?

According to a news study, **India's solar and wind energy sectors added 52,700 new workers**, an eight-fold increase from financial year 2021-22.

- The study was jointly conducted by the **Council on Energy, Environment and Water (CEEW)**, NRDC India (Natural Resources Defence Council India), and Skill Council for Green Jobs (SCGJ).

What are the Highlights of the Study?

- **Statistics:**
 - Nearly **99% of the new workforce** (52,100 workers) were employed in the **Solar Energy** Sector, with the **Wind Energy** sector registering very small growth (600 new workers).
 - India's solar and wind energy sectors jointly employed 1,64,000 workers as of FY'22, showing a 47% increase from FY'21. **84% of this workforce is in the solar energy sector.**

- However, there has been a **"huge shortage" of workers trained in upstream manufacturing segments** such as making polysilicon, ingots, wafers and cells. The bulk of the **current jobs are in assembling solar modules**.
 - This segment is the focus of the recently launched Rs. 19,500 crore (USD 2.43 billion) **Production-Linked Incentive (PLI) scheme, which targets 65 GW of domestic manufacturing capacity.**
- **Potential:**
 - If these trends continue, new on-grid solar (238 GW) and wind (101 GW) capacities can **potentially create about 3.4 million temporary and permanent jobs.**
- **Recommendations:**
 - The skilling programmes must catch up with the new requirements arising from sectors such as solar module and battery manufacturing and hybrid projects.

What are the Potential and Challenges of Green Energy in India?

- **Potential:**
 - India has abundant natural resources, including **solar, wind, hydro, and biomass, which can be harnessed to produce renewable energy.**
 - Moreover, India's rapidly growing population and **economy create a huge demand for energy**, which can be met in part by using green energy sources.
- **Potential Benefits:**
 - **Reduction in Emissions:** The use of green energy sources can significantly **reduce the amount of greenhouse gas emissions** in the atmosphere, which will help to mitigate the impacts of climate change.
 - **Energy Security:** India is **heavily dependent on imported oil and natural gas**, which makes it vulnerable to price shocks and supply disruptions. Green energy sources can reduce this dependence and increase energy security.
 - **Rural Electrification:** Many rural areas in India **still lack access to electricity**, which can be provided by **decentralized green energy sources**, such as solar panels and small-scale wind turbines.
 - **Employment:** The green energy sector has the potential to create millions of new jobs in India, particularly in areas such as renewable energy production, energy efficiency, and grid integration.

Note:

➤ Challenges:

- **Cost:** Even though the cost of renewable energy technologies has come down in recent years, they are **still more expensive than traditional energy sources** such as coal and natural gas.
- **Grid Integration:** Integrating renewable energy sources into the existing energy grid can be challenging, **particularly in terms of managing fluctuations in power generation** and ensuring grid stability.
- **Lack of Investment:** Although there has been a recent increase in investment in the green energy sector in India, there is **still a lack of investment in renewable energy projects**, which limits the sector's ability to grow and create jobs.
- **Skilled workforce:** There is a shortage of skilled workers with the necessary training and experience to work in the green energy sector, which can limit the sector's ability to grow.
- **Land Acquisition:** Acquiring land for renewable energy projects can be a challenge, as it **requires the cooperation and consent of local communities**, who may be resistant to change.

What are the Steps Taken to Promote Green Energy?

- **Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA)**
- **Green Energy Corridor (GEC)**
- **Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME)**
- **International Solar Alliance (ISA)**
- **National Green Hydrogen Mission**

PLI and India's Growth Ecosystem

Why in News?

As the world adjusts to a new economic reality in the wake of the **Covid-19 pandemic**, **India has recognized a strategic opportunity** to establish itself as a key player in the global value chains.


- The manufacturing industry's positive response to the **Production Linked Incentive scheme (PLI)** is likely to **upgrade the labor force's skills, replace old**

machinery, enhance production volumes and make logistics and operations efficient, giving India a chance to become a **key manufacturing player**.

SOP STORY SO FAR

SECTORS WHERE PLI SCHEME HAS BEEN ANNOUNCED


March 2020

- Key starting materials (KSMs)/ drug intermediates (DIs) and active pharmaceutical ingredients (APIs)
- Large scale electronics manufacturing 
- Medical devices

➤ Food products

- White goods (ACs & LED) 

- High-efficiency solar PV modules

- Automobiles & auto components 

- Advance chemistry cell (ACC) battery


November 2020

- Electronics/ technology products 
- Pharmaceuticals drugs
- Telecom & networking products

- Textiles— MMF segment and technical textiles

- Specialty steel

Sept 2021

- Drones and drone components 

What is the Production

Linked Incentive scheme (PLI)?

➤ About:

- The Indian government's introduction of the **PLI scheme** in **14 key manufacturing sectors** is a significant step towards achieving its strategic vision for the manufacturing industry.
 - With a budget of ₹1.97 lakh crore, the **scheme is well-designed to encourage growth and sustainability in the targeted industry** through various **incentives and support measures**.
- Launched in March 2020, the scheme initially targeted **three industries**:
 - Mobile and allied Component Manufacturing
 - Electrical Component Manufacturing and
 - Medical Devices

➤ Targeted Sectors:

- The 14 sectors are **mobile manufacturing**, manufacturing of medical devices, automobiles and **auto components**, pharmaceuticals, drugs, specialty steel, telecom & networking products, electronic products, **white goods (ACs and LEDs)**, food products, textile products, solar PV modules, advanced chemistry cell (ACC) battery, and **drones and drone components**.

Note:

➤ Incentives Under the Scheme:

- The incentives given, are calculated on the **basis of incremental sales**.
 - In some sectors such as advanced chemistry cell batteries, textile products and the drone industry, the **incentive to be given will be calculated on the basis of sales**, performance and local value addition done over the period of five years.
- The **emphasis on R&D investment** will also help the industry keep up with global trends and remain competitive in the international market.

How PLI is Creating a Growth Ecosystem in India?

- **Reducing Dependency on Imports:** This shift in the manufacturing landscape could have significant implications for global trade, **reducing dependency on a single-source country and diversifying the sources of production**.
- **Meeting the Demand:** Increased production volumes are meeting consumer demand, particularly in the **telecom and networking sectors with faster adoption of 4G and 5G** products.
 - The PLI scheme for **large-scale electronics manufacturing (LSEM) saw successful results**, with **97% of mobile phones sold in India** now being made in India. As of September, 2022, the PLI scheme for LSEM attracted investments of ₹4,784 crore and generated 41,000 additional jobs.
- **Reducing Carbon Footprint:** The PLI scheme's emphasis on **green technologies will reduce the carbon footprint** and position India as a pioneer in green policy implementation.
- **Boosting Free Trade Agreements:** Improved productivity is **boosting free trade agreements** for better market access and increased sales are driving demand for better logistical connectivity.
- **Frontlining Rural India:** The government of India is working closely with states to help industries and artisans in rural areas become part of the country's growth story.
 - This is being done through initiatives such as **"one-district-one-product" to support local businesses**, and **"SFURTI"** to improve traditional industries.

Startup India Seed Fund Scheme

Why in News?

Recently, the Ministry of Commerce and Industry has approved Rs. 477.25 crore under the **Startup India Seed Fund Scheme (SISFS)**, which is a flagship Scheme under **Startup India Initiative**.

- **Seed Funding** is an **early stage of investment in a start-up** or a new business idea. The goal of seed funding is to help the company reach a point where it can secure additional rounds of funding or **generate revenue to become self-sustaining**.

What is the Startup India Initiative?

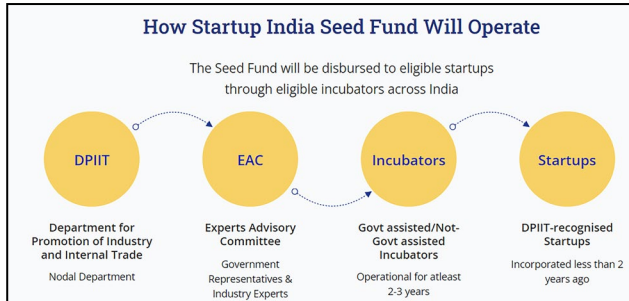
- The Startup India initiative envisages **building a robust Start-up ecosystem in the country** for nurturing innovation and providing **opportunities to budding entrepreneurs**.
- Under the Initiative, an **Action Plan of 19 Action Points** was unveiled by the Prime Minister in January, 2016.
 - This Action Plan laid down a **roadmap for the creation of a conducive ecosystem for Startups in India**.
- The flagship schemes under Startup India initiative namely, **Fund of Funds for Startups (FFS)**, SISFS and **Credit Guarantee Scheme for Startups (CGSS)** extend support to startups at various stages of their business cycle.

What is SISFS?

- **About:**
 - The scheme was announced at **Startup India International Summit on 16th January 2021**.
 - **Department for Promotion of Industry and Internal Trade (DPIIT) approved** an outlay of Rs. 945 Crore for the period of **4 years starting from 2021-22** to provide financial assistance to startups for Proof of Concept, prototype development, product trials, market entry, and commercialization.
- **Execution and Monitoring:**
 - An Experts Advisory Committee (EAC) has been constituted by DPIIT, which will be **responsible for the overall execution and monitoring** of the Startup India Seed Fund Scheme.

Note:

- The EAC will evaluate and **select incubators for allotment of Seed Funds, monitor progress, and take all necessary measures** for efficient utilization of funds towards fulfilment of objectives of Startup India Seed Fund Scheme.



➤ Eligibility:

- A startup, recognized by DPIIT (Ministry of Commerce and Industry), incorporated **not more than 2 years ago** at the time of application.
- Startups **should not have received more than Rs. 10 lakhs of monetary support** under any other Central or State Government scheme.
- Preference would be given to **startups creating innovative solutions in sectors such as social impact, waste management, water management, financial inclusion, education, agriculture, food processing, biotechnology, healthcare, energy, mobility, defence, space, railways, oil and gas, textiles, etc.**

➤ Grants and Support:

- It will support an estimated **3,600 entrepreneurs through 300 incubators** in the next 4 years.
- **Grants of upto Rs. 5 crores** will be provided to the eligible incubators selected by the committee.
- The selected incubators will provide grants of up to **Rs. 20 lakhs for validation of proof of concept, or prototype development, or product trials** to startups.
- Investments of up to Rs. 50 lakhs will be provided to the startups for market entry, commercialization, or scaling up through convertible debentures or debt-linked instruments.

What is the Need for Seed Fund?

- Easy availability of capital is essential for entrepreneurs **at the early stages of growth** of an enterprise.

- The Indian startup ecosystem suffers from capital inadequacy in the seed and '**Proof of Concept' development stage.**
- The capital required at this stage **often presents a make-or-break situation for startups** with good business ideas.
- Many innovative business ideas fail to **take off due to the absence of this critical capital** required at an early stage for proof of concept, prototype development, product trials, market entry and commercialization.
- Seed Fund offered to **such promising cases can have a multiplier effect in validation of business ideas** of many startups, leading to employment generation.

What are the other

Initiatives Pertaining to Startups?

- **Startup Innovation Challenges:** It is a fantastic opportunity for any startup to leverage their networking and fund-raising efforts.
- **National Startup Awards:** It seeks to recognize and reward outstanding startups and ecosystem enablers that are contributing to economic dynamism by spurring innovation and injecting competition.
- **Ranking of States on Support to Startup Ecosystems:** It is an evolved evaluation tool aimed to strengthen the support of States and UTs to holistically build their startup ecosystems.
- **SCO Startup Forum:** The first-ever **Shanghai Cooperation Organisation (SCO)** Startup Forum was launched in October 2020 to develop and improve startup ecosystems collectively.
- **Prarambh:** The 'Prarambh' Summit aims to provide a platform to the startups and young minds from around the world to come with new ideas, innovation and invention.

India's Farm Exports

Why in News?

The **agriculture sector** in India has **experienced buoyant growth in the past two years.**

- India's agricultural exports are poised to scale a new peak in the financial year ending March 31, 2023. But so are imports, **bringing down the overall farm trade surplus.**

Note:



INDIA'S AGRICULTURAL TRADE IN MILLION US DOLLARS			
YEAR	EXPORTS	IMPORTS	TRADE SURPLUS
2012-13	41726.33	18978.33	22748.00
2013-14	43251.66	15528.94	27722.72
2014-15	39080.43	21151.77	17928.66
2015-16	32808.64	22578.60	10230.04
2016-17	33696.83	25643.40	8053.43
2017-18	38897.21	24890.90	14006.31
2018-19	39203.53	20920.34	18283.19
2019-20	35600.47	21859.99	13740.48
2020-21	41895.68	21652.05	20243.63
2021-22	50240.21	32422.30	17817.91
Apr-Dec 21	36155.42	24071.55	12083.87
Apr-Dec 22	38997.92	27770.64	11227.28

What are the Agri-Stats?

- The value of **farm exports in April-December 2022 was 7.9% higher** (USD 39 Billion) than the USD 36.2 bn for the corresponding period of the previous year.
- However, **imports have grown 15.4%** (USD 27.8 bn) in Apr-Dec 2022, over the USD 24.1 bn for Apr-Dec 2021.
- As a result, there **has been a further shrinking of the surplus on the farm trade account.**
- The two big contributors to India's **agri-export growth have been Rice and Sugar.**
 - **Rice:** India in 2021-22 shipped out an all-time-high 21.21 million tonnes (mt) of rice valued at USD 9.66 billion.
 - That included 17.26 mt of non-basmati and 3.95 mt of basmati rice.
 - **Sugar:** Sugar exports hit a record value of USD 4.60 billion in 2021-22, as against USD 2.79 billion in last fiscal.
 - This fiscal has seen a further surge of 43.6%, from USD 2.78 billion in April-December 2021 to USD 3.99 billion in April-December 2022.
- However, exports of some **big-ticket items have faltered or slowed**, such as spices, wheat, buffalo meat etc.

What about the Imports?

- **Vegetable Oil:**
 - According to the Solvent Extractors' Association of India, **India's total edible oil imports rose** from 13.13 mt in 2020-21 to 14.03 mt in the 2021-22 oil year (Nov-Oct), and increased further by **30.9% from 2.36 mt** in Nov-Dec 2021 to 3.08 mt in Nov-Dec 2022.
- **Cotton:**

- India has turned from a **net exporter to a net importer of cotton.**
- Exports collapsed to USD 512.04 million in April-December, 2022 (from USD 1.97 billion in April-December 2021) and imports have also soared from USD 414.59 million to USD 1.32 billion for the same period.

➤ Cashew:

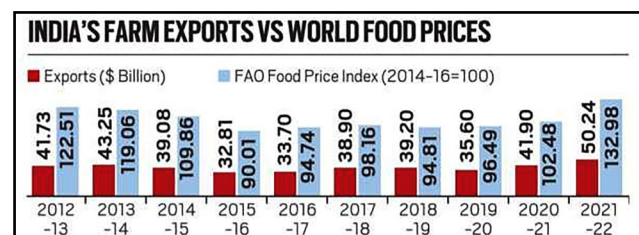
- During April-December 2022, imports **have posted a 64.6% rise to USD 1.64 billion** from USD 996.49 million in April-December 2021, even as exports of cashew products have plummeted from USD 344.61 million to USD 259.71 million for the same period.

What are the Related Initiatives?

- **Agri Export Policy**
- **Trade Infrastructure for Export Scheme**
- **Agricultural and Processed Food Products Export Development Authority**
- **Market Access Initiative**

How India's Farm Performance is Linked to International Commodity Prices?

- The **UN Food and Agriculture Organization's (FAO) Food Price Index** — having a base value of 100 for the 2014-16 period — averaged 122.5 points in 2012-13 and 119.1 points in 2013-14.
 - Those were the years when **India's agri-exports were at USD 42-43 billion.**
- As the index crashed to 90-95 points in 2015-16 and 2016-17, so did exports to USD 33-34 billion.



- The FAO index peaked at 159.7 points in March 2022, just after the Russian invasion of Ukraine. Since then, **it has fallen every month, with the latest reading of 131.2 points for January 2023** the lowest after the 129.2 points of September 2021.
 - More than a general export slowdown, it's the growth in imports that should be cause for concern.

Note:

- Going by past correlation i.e., **when the index was high, exports were high, and when it was low, exports were low.** Currently, **the index has been falling, which may lead to a slowdown in India's farm exports** and an increase in imports.
- In the event, the focus of policymakers too, **may have to shift from being pro-consumer (to the extent of banning/ restricting exports) to pro-producer** (providing tariff protection against unbridled imports).

Lab-Grown Diamonds

Why in News?

The Ministry of Finance (MoF) in its 2023-24 Union Budget has put special emphasis on **Laboratory-Grown Diamonds (LGD)**.

- Scientists working at a General Electric research laboratory in New York are credited with the creation of the **world's first-ever LGD in 1954.**

What are Laboratory-Grown Diamonds?

➤ About:

- LGD are manufactured in laboratories, as opposed to naturally occurring diamonds. However, the **chemical composition and other physical and optical properties** of the two are the same.
- Naturally occurring diamonds take millions of years to form; they are created when carbon deposits buried **within the earth are exposed to extreme heat and pressure.**

➤ Manufacturing:

- They are mostly manufactured through two processes, **High Pressure, High Temperature (HPHT)** method or **Chemical Vapour Deposition (CVD)** method.
- Both HPHT and CVD methods of growing diamonds artificially begin with a seed, **a slice of another diamond.**
 - **In the HPHT method,** the seed, along with pure graphite carbon, is exposed to temperatures around 1,500 degrees Celsius and extremely high pressure.
 - **In the CVD method,** the seed is heated to around 800 degrees Celsius inside a sealed chamber filled with a carbon-rich gas. The gas sticks to the seed, gradually building the diamond.

➤ Applications:

- They are used for industrial purposes in **machines and tools and their hardness and extra strength** make them ideal for use as cutters.
- Pure synthetic diamonds are used in electronics as a heat spreader for high-power laser diodes, **laser arrays and high-power transistors.**

➤ Significance:

- The **environmental footprint** of a diamond grown in a laboratory is **much lesser than** that of a naturally occurring diamond.
- According to a report by Diamond Foundry, an environmentally conscious LGD manufacturer, it takes **ten times more energy to extract a natural diamond** from the earth than it takes to create one above the ground.
- Open-pit mining, one of the most common methods of mining naturally occurring diamonds, involves **moving tonnes of earth and rock to extract these precious stones.**

What is the Scenario of India's Diamond Industry?

- India is the **world's largest cutting and polishing center for diamonds**, accounting for over 90% of polished diamond manufacturing globally. This is attributed to factors such as the **easy availability of highly skilled labour, cutting-edge technology,** and lower costs involved.
- **Surat** in Gujarat is a **global hub for diamond manufacturing.**
- The US is the biggest market for cut and polished diamonds, with China a close second.
- India contributes **19% of the total diamond exports in the world.**
- The UAE is also the largest export destination for Indian gold jewellery, accounting for over 75% of the South Asian country's jewellery exports.
- India's overall exports of gems and jewellery in November 2022 were USD 2.43 billion, up 2.05 % from the same year-ago period.

What are the Government

Initiatives to Promote Lab-Grown Diamond?

- The 2023 Union Budget promises to reduce **the basic customs duty on seeds used in the manufacture**

Note:

of lab-grown diamonds in a bid to popularise their production in India— the duty on seeds for rough LGDs will be reduced from 5% to nil.

- A **five-year research grant will also be provided** to one of the Indian Institute of Technologies (IITs) for research and development in the field of LGDs.
- MoF has also proposed the **creation of new tariff lines to help in better identification of a number of products**, including synthetic diamonds. The aim of the move is to help facilitate trade as well as to have clarity on availing concessional import duty

Protecting Investors from Market Volatility

Why in News?

Recently, the **SC (Supreme Court)** asked the **SEBI (Securities and Exchange Board of India)** and the government about the existing regulatory framework in place to protect Indian middle-class investors.

- This comes after the **Adani Group was accused of stock manipulation** and accounting fraud by the **American firm Hindenburg Research**.
- Earlier, a number of small investors lost lakhs of crores due to rapid market volatility following a collapse in the value of the shares of the Adani Group.

What is the SC's Observation?

- The stock market is no longer a place for just “high value investors”, rather it is a place now where **a whole wide spectrum of the middle class is investing** due to changes in the financial and tax regimes.
- Therefore, there is a need for circuit-breakers like in other areas, so that market volatility does not cost much.
- Stock market goes entirely by sentiment, Capital is moving seamlessly, funds are flowing in and out of India, making it imperative to devise robust mechanisms in **place to protect Indian investors**.

What is Market Volatility?

- **About:**
 - The stock markets sometimes experience sharp and unpredictable price movements, either down or up. These movements are **often referred to as**

a “**volatile market**” and can occur over a **period of days, weeks, or months**.

- **Causes:**
 - **Surprising economic news** that differs from the expectations of investors.
 - A **sudden change in monetary policy**, such as the Federal Reserve announcing plans to.
 - Political **developments including unexpected election results**, an event such as a government shutdown or passage of key legislation designed to give the economy a boost.
 - Geopolitical events such as **an outbreak of a military conflict or flaring tensions** between powerful nations that could have economic ramifications.
 - Events specific to markets, **such as stocks becoming overvalued**.
 - This occurred in 2000 when a number of overpriced “**dot-com**” stocks faced a **sudden and dramatic selloff** as investors became concerned that prices had outdistanced underlying company fundamentals.

How can Market Volatility be Dealt with?

- **Monetary Policy:**
 - The **Reserve Bank of India (RBI)** can adjust **interest rates to influence the supply of money and credit** in the economy, which can have an impact on **market sentiment and stability**. The stock market and the interest rates have an inverse relationship.
 - For example, a **rate cut can help calm investor concerns** and boost market confidence.
- **Fiscal Policy:**
 - Governments can use **fiscal measures such as tax cuts, spending increases**, and targeted subsidies to boost economic activity and provide support to affected industries and individuals.
- **Regulatory Measures:**
 - Governments and regulatory authorities can introduce **measures to increase transparency and stability in financial markets**.
 - This may include increased **disclosure requirements for companies**, stricter standards for financial institutions, and greater oversight of hedge funds and other speculative investors.
- **International Cooperation:**
 - In a globalized financial system, **sudden market volatility can spread quickly across borders**.

Note:

- Coordination among central banks and **regulatory authorities can help mitigate the impact** of market volatility and prevent financial contagion.
- **Financial Education and Literacy:**
 - Encouraging financial education and literacy among the public **can help reduce the risk of market speculation** and improve overall financial stability.
- **Diversification:**
 - By spreading investments across different assets and markets, investors can reduce the impact of market volatility on their portfolios.

What are the Investor Protection Measures?

- Investor protection **legislation is implemented under the Section 11(2) of the SEBI Act**. The measures are as follows:
 - Stock Exchange and other securities market business regulation.
 - Registering investment schemes like Mutual fund & venture Capital funds, and regulating their functioning.
 - Promotion and controlling of **self-regulatory companies**.
- **Investor Education and Protection Fund (IEPF):**
 - Government of India established IEPF under the 1956 Company Act.
 - According to the act, the company which has completed seven years in the business should **hand over all the unclaimed fund dividends, matured deposits, and Debentures, share application money etc. to the Government** through IEPF.
- **Investor Protection Fund:**
 - IPF is set up by Inter-connected Stock Exchange (ISE) in accordance with the guidelines issued by the Ministry of Finance for investor protection, in order to **compensate the claims of investors against the members** of exchanges (brokers) who have defaulted or failed to pay.

What is a Capital Market?

- Capital market is a market where **securities, such as stocks and bonds, are bought and sold**.
- It provides a platform for **companies, governments, and other entities to raise capital** by issuing securities and for investors to invest in these securities with the expectation of earning a return.

- The capital market can be divided into two main segments, the **Primary Market and the Secondary Market**.
 - The **primary market** is where new securities are issued and sold directly to investors.
 - The **secondary market** is where securities that have already been issued are bought and sold among investors.
- Capital markets play a **critical role in the functioning of the economy by connecting savers with borrowers and facilitating the flow of capital** to its most productive uses. Capital markets also provide **investors with the opportunity to diversify their portfolios**, manage risk, and potentially earn higher returns.

World Economic Outlook: IMF

Why in News?

Recently, the **International Monetary Fund (IMF)** has released its World Economic Outlook (WEO) Update, which has marginally improved the **forecast for global growth in 2023**.

What are the Key Takeaways of WEO?

- **Global Growth will Bottom Out:**
 - The global growth, which was estimated at 3.4% in 2022, is now projected to fall to 2.9% in 2023 before rising to 3.1% in 2024.
 - The IMF effectively rules out a global **recession**.
 - Negative growth in global **GDP (Gross Domestic Product)** or global GDP per capita—which often happens when there is a global recession—is not expected.
 - Instead, it expects **global growth to bottom out in 2023** before starting to gather speed in 2024.
- **Relief of Inflation will be Slower:**
 - **Inflation-Disinflation:**
 - Inflation is expected to have peaked in 2022 but the **disinflation will be slow** and take all of 2023 and 2024.
 - **Headline Inflation:**
 - About 84% of countries are expected to **have lower headline (consumer price index) inflation** in 2023 than in 2022.

Note:

- **Global Inflation:**

- Global inflation is set to fall from 8.8 % in 2022 (annual average) to 6.6 % in 2023 and 4.3 % in 2024—above pre-pandemic (2017–19) levels of about 3.5 %.

- **Slowing of Price Rise:**

- Price rise is slowing for two main reasons:
 - One, **monetary tightening all across** the world — higher interest rates drag down overall demand for goods and services and that, in turn, slows down inflation.
 - Two, in the wake of a faltering demand, prices of different commodities — both fuel

and non-fuel — have come down from their recent highs.

- In 2023, advanced economies are expected to **have an inflation of 4.6%** while emerging economies will continue to face an inflation of 8.1%.

- **India will be the Fastest Growing Economy:**

- India will be the world's fastest growing economy in 2023 and 2024.
- Growth in India is set to **decline from 6.8 % in 2022 to 6.1 % in 2023** before picking up to 6.8% in 2024, with resilient domestic demand despite external headwinds.

What is the International Monetary Fund?

- **About:**

- The IMF was set up along with the **World Bank after the Second World War** to assist in the reconstruction of war-ravaged countries.
 - The two organizations agreed to be set up at a conference in Bretton Woods in the US. Hence, they are known as **the Bretton Woods twins**.
- **Created in 1944, the IMF is governed by and accountable to the 190 countries** that make up its near-global membership. India joined on 27th December 1945.
 - The IMF came into **formal existence in December 1945**.
- The IMF's primary purpose is to ensure the stability of the international monetary system — the system of exchange rates and international payments that enables countries (and their citizens) to transact with each other.
 - The Fund's mandate was **updated in 2012 to include all macroeconomic and financial sector issues** that bear on global stability.

- **Reports by IMF:**

- **Global Financial Stability Report.**
- **World Economic Outlook.**

- **World Economic Outlook:**

- It is a survey by the IMF that is **usually published twice a year in the months of April and October**.
- It analyzes and predicts global economic developments during the near and medium term.
- In response to the growing demand for more frequent forecast updates, the WEO Update is published in January and July, between the two main WEO publications released usually in April and October.



Note:

International Relations

Highlights

- India, France, UAE Trilateral Initiative
- India-Kenya Ties
- Multilateral Security Dialogue on Afghanistan
- India-Mongolia Relations
- UNSC Reforms
- Paris Club
- China-Pakistan Economic Corridor
- 3rd ASEAN Digital Ministers Meeting
- Canada's Indo-Pacific Strategy
- Japan's Reaching Out to the Global South

India, France, UAE Trilateral Initiative

Why in News?

Recently, **India, France, and the United Arab Emirates (UAE)** have agreed to form a partnership to **work together in the fields of nuclear and solar energy**, as well as in tackling **climate change and preserving biodiversity**.

- The idea of this partnership was first discussed at a meeting in New York during the **United Nations General Assembly in September 2022**.

What Are the Major Highlights of the Trilateral Initiative?

- This trilateral initiative will serve as a **forum to promote the design and execution of cooperation projects in the fields of energy**, with a focus on **solar and nuclear energy**, as well as in the **fight against climate change** and the protection of biodiversity, particularly in the **Indian Ocean region**.
- The three countries have also agreed to work together in defence, countering infectious diseases, and promoting cooperation in global health organisations such as the **World Health Organization, Gavi-the Vaccine Alliance, the Global Fund, and Unitaid**.
- Further, the three countries will attempt to identify tangible cooperation on implementing the **"One Health" approach**, and support the development of local capacities in **biomedical innovation and production within developing countries**.
- The three countries also agreed to expand their cooperation through initiatives such as the **Mangrove Alliance for Climate** led by the UAE and the **Indo-Pacific Parks Partnership** led by India and France.

What are the Other Areas of Cooperation between India and France?

- **Defence Cooperation:**
 - The three services of both countries have regular defence exercises; viz.
 - **Exercise Shakti (Army)**
 - **Exercise Varuna (Navy)**
 - **Exercise Garuda (Air Force)**
 - India entered into a contract with a **French firm to build six Scorpene submarines** in **India's Malegaon dockyards** through a technology-transfer arrangement in 2005.
 - Also, India and France had signed the **inter-government agreement in 2016**, under which France agreed to provide **36 Rafale fighter jets at a cost of around 60,000 crore rupees** to India.
- **Other Initiatives:**
 - India and France are in joint efforts to limit climate change and develop the **International Solar Alliance**.
 - France has agreed to be part of **India's Venus mission, scheduled for 2025**.
 - Also, ISRO's Venus instrument, **VIRAL (Venus Infrared Atmospheric Gases Linker)** has been co-developed by **French and Russian agencies**.

What are the Other Areas of Cooperation between India and UAE?

- **Collaboration:** They both are the members of **I2U2 Grouping**.
- **Economic Partnership:** In 2022 India & UAE signed a **Comprehensive Economic Partnership Agreement (CEPA)** with an aim of taking bilateral trade to USD 100 billion within 5 years.

Note:



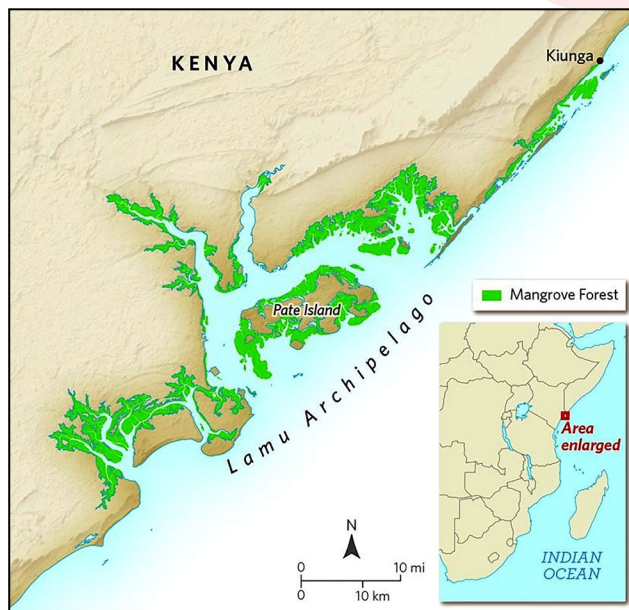
- Also, India and UAE are discussing ways to **boost non-oil commerce in rupees** that will **promote internationalisation of rupees**.
- UAE is the **second largest export destination of India (after the US)** with an amount of over US\$ 28 billion for the year 2021-22.
 - For the UAE, India is the **second largest trading partner for the year 2021** with an amount of around **USD 45 billion (non-oil trade)**.
- **Defence Cooperation:** With the **spread of radicalism in the Gulf and South Asia**, India looks to enhance **security cooperation with the UAE** to counter terrorist threats and combat radicalization.
 - **'Desert Eagle II'**, is a joint **air combat exercise**, between **air forces of India and UAE**.

India-Kenya Ties

Why in News?

India recently handed over **100 nautical charts to Kenya**, the result of a collaborative survey between the navies of both countries of the coastal area near the **Lamu Archipelago**.

- From India, the survey was conducted by the **Indian Navy's National Hydrography Office**.



What are the Key Points Related to Kenya?

- Kenya is located in East Africa. Its terrain rises from a **low coastal plain on the Indian Ocean** to mountains and plateaus at its centre.

- Kenya's location between the **Indian Ocean and Lake Victoria** means that people from all over **Africa and the Middle East** have travelled and traded across it for centuries.
 - This has created a **diverse culture with many ethnic groups and languages**.
- Scientists think **Northern Kenya and Tanzania** may have been the **original birthplace of humans**.
- The bones of one of the **earliest human ancestors** ever found were discovered in **Kenya's Turkana Basin**.
 - **Lake Turkana, the world's largest desert lake**, is part of the Omo-Turkana basin, which stretches into four countries: **Ethiopia, Kenya, South Sudan and Uganda**.
- **UN-Habitat** maintains its **headquarters at the United Nations Office at Nairobi, Kenya**.

How are India's Relations with Kenya?

- **India and Kenya** have historical linkages rooted in the **well-documented trade in spices**.
 - In addition to being **India's maritime neighbour**, it is also a significant stakeholder in **determining the geopolitics of the Western Indian Ocean**.
- India has a long-established connection with the **African Union** of which **Kenya is an active member**.
 - The Kenyan government in 2017, recognized the **Indian descent as the 44th tribe in the country**.
- Also, till date, a **total of 14 Kenyan personnel** has undergone courses at the **National Institute of Hydrography, Goa** under the **Indian Technical and Economic Cooperation (ITEC) scheme**.

What is the Indian Technical and Economic Cooperation Programme?

- ITEC is the **leading capacity building platform of the Ministry Of External Affairs, Government of India**.
- Instituted in 1964, ITEC is **one of the oldest institutionalised arrangements** for international capacity building having trained more than 200,000 officials from 160+ countries in both the civilian and in the defence sector.
- EC offers nearly **10,000 fully-funded in-person training opportunities** through nearly **400 courses** offered at **100+ eminent institutes** in India each year.

Note:

Multilateral Security Dialogue on Afghanistan

Why in News?

Recently, the **National Security Advisor (NSG)** addressed a **Multilateral Security Dialogue on Afghanistan in Moscow**.

- The discussion revolved around issues related to **Afghanistan**, including security and humanitarian challenges and was attended by **representatives from various countries including Russia, China, and Iran**.

What are Key Highlights of the Dialogue?

- NSG emphasized that **no country should be allowed to use Afghan territory for exporting terrorism** and that India will always support the people of Afghanistan in their time of need.
- NSG also spoke about the **importance of UN Security Council resolution 2593** that calls for **denying sanctuary to terror outfits in the region**.

How is India's Relations with Afghanistan?



- **About:**
 - India and Afghanistan have had close **historical, cultural, and economic ties for centuries**.
 - The relationship between the two countries has undergone significant changes in the **post-9/11 era**, with India playing an increasingly active role in the reconstruction and development of Afghanistan.
- **Political Relations:**
 - India has been a strong supporter of Afghan democracy and has consistently advocated for a stable, peaceful, and prosperous Afghanistan.

- **But India is still yet to recognize the Taliban regime in Afghanistan** and has been advocating for the formation of an **inclusive government in Kabul**.

- **Also, India re-established its diplomatic presence in Kabul in June 2022.**

➤ Humanitarian Assistance:

- India has been providing **humanitarian aid to Afghanistan**, including **40,000 metric tonnes of wheat, 60 tonnes of medicines, 5,00,000 Covid vaccines**, winter clothing, and 28 tonnes of disaster relief.
- India has also granted scholarships to **2,260 Afghan students**, including 300 girls, over the past two years.

➤ Economic Relations:

- India has undertaken more than **400 key infrastructure projects** in all **34 Afghan provinces** and has signed strategic agreements to enhance trade and bilateral relations.
- From 2002 to 2021, India spent **USD 4 billion** in development assistance in Afghanistan, building **high-visibility projects** such as highways, hospitals, the parliament building, rural schools, and electricity transmission lines.



➤ Connectivity:

- India has been working towards building **regional connectivity** with Afghanistan by **developing the Chabahar port** and providing access to markets in the region.

Note:

What is the**Significance of Afghanistan for India?**

- **Geopolitical Location:** Afghanistan is located at the **crossroads of Central and South Asia**, and its stability and security have a direct impact on India's interests in the region.
 - Afghanistan serves as a **bridge between South and Central Asia** and is critical for India's pursuit of regional connectivity and economic integration.
- **Countering Terrorism:**
 - Afghanistan has been a **hotbed of terrorism, with various terrorist groups operating from its territory.**
 - India has a direct interest in ensuring that Afghanistan does not become a **safe haven for terrorists who threaten its security.**
- **Strategic Interests:**
 - Afghanistan is important to **India's strategic interests** as it is located at the heart of the **historic Silk Road.**
 - India's presence in Afghanistan helps to **counterbalance the influence of Pakistan and China in the region.**

India-Mongolia Relations

Why in News?

Recently, the 11th meeting of the India-Mongolia **Joint Working Group** was held in India.

- While acknowledging the growing ties between both the countries, they expressed satisfaction at the ongoing defense cooperation despite the limitations imposed by **Covid-19 pandemic.**



How have been the India-Mongolia Relations?

- **Historical Relations:**
 - India and Mongolia have interacted through **Buddhism** throughout history.
 - Mongolia regards India as its "third" neighbor along with US, Japan, and Germany and a "spiritual neighbour".
- **Diplomatic Relations:**
 - India **established diplomatic relations with Mongolia in 1955** and it was the first country outside the Soviet bloc to open diplomatic relations with Mongolia.
 - The **Indian Resident Mission in Ulaanbaatar** was opened in 1971.
 - This relationship was upgraded to "strategic partnership" in 2015 when the Indian Prime Minister visited Mongolia and declared it as an essential component of '**Act East Policy**'.
- **International Cooperation:**
 - Mongolia has publicly reiterated its support for India's membership to the permanent seat of the expanded **United Nations Security Council (UNSC).**
 - India has played an important role in getting **Mongolia membership to key international forums**, including the **United Nations (UN)**, despite strong opposition from China and Taiwan.
 - India also championed the inclusion of **Mongolia in the Non-Aligned Movement.**
 - In a reciprocal gesture, Mongolia co-sponsored a 1972 UN resolution with India and Bhutan for the recognition of the newly liberated Bangladesh.
- **Economic Cooperation:**
 - In 2022, an **India-built oil refinery at the cost of more than USD 1 billion** and with a capacity of 1.5 million metric tonnes was opened near **Sainshand in southern Dornogovi province of Mongolia.**
 - This refinery will take care of 75 % of Mongolia's oil refining needs.
 - India - Mongolia bilateral trade was USD 35.3 million in 2020, down from USD 38.3 million in 2019.
- **Cultural Cooperation:**
 - The **India-Mongolian Agreement on Cultural Cooperation, signed in 1961**, has governed the Cultural Exchange Programme (CEP) between the two countries.

Note:

- The Agreement envisages co-operation in the fields of education by way of scholarships, exchange of experts, participation in conferences, etc.
- **Defence Cooperation:**
 - Joint defence exercises code-named **Nomadic Elephant**.
 - India is also **an active participant** in an annual week-long joint training exercise called the **Khaan Quest, hosted by Mongolia**.
- **Cooperation over Environmental Issues:**
 - Part of the **Bishkek Declaration (snow leopard)**.

What are the Key Facts Related to Mongolia?

- Mongolia is a **landlocked country located in East and Central Asia**. It is bordered by Russia to the north and China to the south, east and west.
- It is the **world's second-largest landlocked country** and the most sparsely populated country in the world.
- The majority of the population **still practices traditional nomadic herding, and Mongolia is home to a variety of ethnic groups**, including Mongols, Kazakhs, and Tuvans.
- The country is known as the "Land of the Eternal Blue Sky" and as the "Land of the Horse".
- Mongolia's landscape is **dominated by the Gobi Desert in the south and the towering Altai Mountains in the west**.
- Despite its rapid modernization in recent years, **Ulaanbaatar still retains a strong traditional Mongolian identity**, with many historical temples, monasteries, and other cultural landmarks to explore.
- The country was once the center of the Mongol Empire, which was the largest contiguous empire in history, spanning from Europe to Asia.

UNSC Reforms

Why in News?

Recently, the UN General Assembly president has said the **UN Security Council (UNSC)** has become "paralysed" and "dysfunctional" in its "present form", as it has not been able to take any **decision since the Russia-Ukraine war started**.

What are the Hurdles in Reforming UN?

- The General Assembly has always been very much divided. Among the 193 countries, there are **five**

negotiating groups and they are neutralising each other.

- The functioning of the General Assembly is as much important as **the permanent members of the UNSC in ensuring reform** of the United Nations system.
- The permanent members were "**historically not enthusiastic**" about reform of the UN system but they have all agreed that **it is necessary for introducing changes in the Security Council**.

What is the United Nations Security Council?

- The UNSC was **established by the UN Charter in 1945**.
 - It is one of the 6 principal organs of the United Nations.
- **UNSC has 15 members:** 5 permanent members (P5) and 10 non-permanent members elected for 2-year terms.
 - The **5 permanent members** are: United States, Russian Federation, France, China and the United Kingdom.
- India has served seven times in the UNSC as a non-permanent member and in January 2021, India entered the UNSC for the eighth time.

What are the Issues with Regard to UNSC?

- **Lack of Adequate Representation:**
 - The UN Security Council is **less effective because it is less representative**, the most pertinent **absence being that of Africa**, a continent of 54 countries.
 - Current global issues are complex, and interconnected. Lack of representation of geopolitical and geo-economically important countries is **leaving out a large segment of global opinion to have a voice in the highest security summit**.
 - Furthermore, It is a matter of concern that **globally important countries such as India, Germany, Brazil, and South Africa** are not represented on the UNSC permanent members list.
- **Misuse of Veto Power:**
 - Veto power has been always criticized by many experts as **well as by most States calling it a "self-chosen club of the privileged"** and non-democratic and not allowing the Council to make necessary decisions whenever it displeases any one of the P-5.

Note:

- It is also not appropriate for the current **global security environment to be guided by elite decision-making** structures.
- **Geopolitical Rivalry within P5:**
 - The geopolitical rivalry among the permanent members has prevented the UNSC **from coming up with effective mechanisms to deal** with global issues.
 - Taking the current world order as an example, the P5 members: **United States, Russia, and China are three poles** on the periphery of the globe having several geopolitical issues revolving around them (**Taiwan Issue and Russia-Ukraine War**).
- **Threat to State's Sovereignty:**
 - As the principal organ of international peacekeeping and conflict resolution, the **UNSC is responsible for keeping peace and managing conflict**. Its decisions (referred to as resolutions) are binding on all member countries, unlike the General Assembly's.
 - This means that any state's sovereignty can be encroached upon if necessary by taking action, such as **imposing sanctions**.

What can be the Solution?

- **Democratization of UNSC:**
 - The power imbalance between the P5 and other countries in the **UNSC needs to be addressed urgently to make the council more democratic** and increase its legitimacy in governing international peace, security and order.
- **Expansion of UNSC:**
 - The changing needs of global governance for **peace and security require significant reforms in the UNSC**, including expanding its permanent and non-permanent seats to better address the complex and evolving challenges **to international peace and security**.
- **Equitable Representation:**
 - Equitable representation of all the regions in the UNSC is critical **to decentralizing its governing power and authority over nations**.
 - The decentralization of the UNSC's decision-making processes will enable its transformation to a more representative, participatory body.
- **India's Role:**

- India as the current one of the non-permanent members of the UNSC can start by drafting a resolution containing a comprehensive set of proposals for reforming the UNSC.
- In September 2022, India made a **push for UNSC reform hosting a meeting of two separate groupings – G-4 and L-69** – in New York on the sidelines of the UN General Assembly.
- As India leads **Global South**, it needs to revitalise its engagement with its traditional partners in the “global south” by articulating their peace and security concerns in the UNSC.

Paris Club

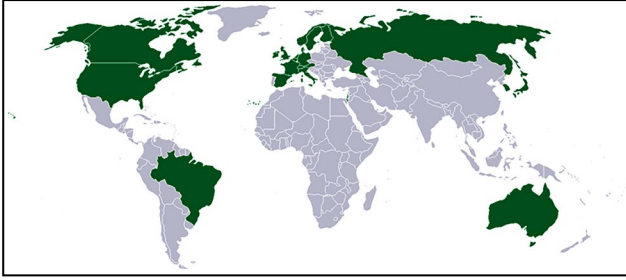
Why in News?

- The **Paris Club**, an informal group of creditor nations, will provide financial assurances to the **International Monetary Fund (IMF)** on Sri Lanka's debt.
- Sri Lanka needs **assurance from the Paris Club** and other creditors in order to receive a **USD 2.9 billion** bailout package from the IMF, following an **economic crisis** in 2022.

What is the Paris Club?

- **About:**
 - The **Paris Club** is a group of **mostly western creditor countries** that grew from a **1956** meeting in which **Argentina agreed to meet its public creditors in Paris**.
 - It describes itself as a forum where official creditors meet **to solve payment difficulties faced by debtor countries**.
 - Their objective is to **find sustainable debt-relief solutions** for countries that are **unable to repay their bilateral loans**.
- **Members:**
 - **The members are:** Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Japan, Netherlands, Norway, Russia, South Korea, Spain, Sweden, Switzerland, the United Kingdom and the United States.
 - All 22 are members of the group called **Organisation for Economic Co-operation and Development (OECD)**.

Note:



- **Involved in Debt Agreements:**
 - According to its official website, Paris Club has reached **478 agreements with 102 different debtor countries**.
 - Since 1956, the debt treated in the framework of **Paris Club agreements** amounts to **USD 614 billion**.
- **Recent Developments:**
 - The Paris group countries dominated bilateral lending in the last century, but their **importance has receded over the last two decades** or so with the emergence of **China as the world's biggest bilateral lender**.
 - In Sri Lanka's case, for instance, **India, China, and Japan** are the largest bilateral creditors.
 - Sri Lanka's debt to China is **52% of its bilateral debt, 19.5% to Japan, and 12% to India**.

What is India's Position on Bilateral Negotiation with Sri Lanka?

- India launched its own **bilateral negotiations with Sri Lanka** in January 2023.
 - The **Indian External Affairs Minister** announced that India had written to the **IMF** providing the necessary financial assurances, adding that it hoped others would follow suit.
- The decision of financing assurance was also a reassertion of India's belief in the principle of **"neighborhood first"**, and not leaving a partner to fend for themselves.

China-Pakistan Economic Corridor

Why in News?

Pakistan inaugurated a USD 2.7 billion nuclear reactor under **China-Pakistan Economic Corridor (CPEC)**, providing some relief as the nation grapples with an energy crisis.

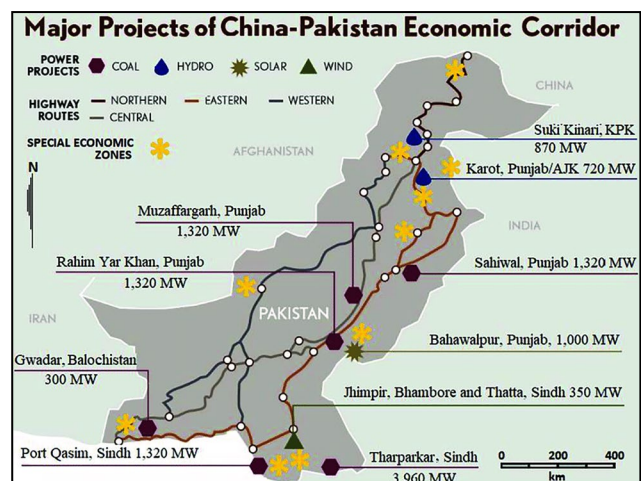
- This is a 1,100 megawatts capacity power plant, which will generate some of the nation's cheapest electricity.

What is the Background

- Pakistan experienced **nationwide power outages recently due to a breakdown in its national grid**.
- The country has **struggled with blackouts for years and is facing surging energy costs, low foreign-exchange reserves**, and pressure on its government budget.
- Pakistan is in talks with the **International Monetary Fund** for a bailout in exchange for increased energy tariffs. The country's foreign-exchange reserves fell to the lowest in nine years, as high fossil fuel costs put pressure on the government's budget.

What is CPEC?

- CPEC is a **3,000-km long route of infrastructure projects connecting China's northwest Xinjiang Uygur Autonomous Region and the Gwadar Port** in the western province of Balochistan in Pakistan.
- It is a bilateral project **between Pakistan and China**, intended to promote connectivity across Pakistan with a network of highways, railways, and pipelines accompanied by energy, industrial, and other infrastructure development projects.
- It will pave the way for **China to access the Middle East and Africa from Gwadar Port**, enabling China to access the Indian Ocean and in return China will support development projects in Pakistan to overcome the latter's energy crises and stabilising its faltering economy.
- CPEC is a part of the **Belt and Road Initiative**.
 - The BRI, launched in 2013, aims to link Southeast Asia, Central Asia, the Gulf region, Africa and Europe with a network of land and sea routes.



Note:

What are the Challenges of CPEC for Pakistan and China?

➤ **Pakistan:**

- **Regional Imbalances:** CPEC is focused on certain areas and provinces in Pakistan, leading to concerns about **regional imbalances** in development and investment.
- **Debt Trap:** Pakistan's debt levels have become a concern **due to the large scale of projects financed by loans from China** and the ability to repay these loans. **China is now Pakistan's largest creditor**, with Pakistan owing 27.4% of its total external debt to China in 2021, according to the IMF.
- **Environmental Impacts:** The large-scale infrastructure projects that make up **CPEC could have negative environmental impacts**, including deforestation, loss of biodiversity, and air and water pollution.
- **Social Implications:** The development of the project has led to concerns about the displacement of local communities and the loss of their traditional livelihoods, as well as the **impact of increased migration and population pressures** in the region.
- **Sovereignty Concerns:** Some have raised concerns about China's increasing influence in Pakistan and the potential for the project to **compromise the country's sovereignty and independence**.

➤ **China:**

- **Security Concerns:** The security of Chinese workers and the stability of the region pose a major challenge for the success of CPEC.
- **Political Opposition:** There has been opposition from certain political parties and groups who are concerned about the perceived lack of transparency and the potential long-term implications of the project on Pakistan's sovereignty.

What are CPEC's Implications for India?

➤ **India's Sovereignty:**

- India has continuously opposed the project since it passes through the **Pakistan-occupied Kashmir territory of Gilgit-Baltistan** – a claim opposed by Pakistan.
- The corridor is also perceived to be **an alternative economic road link for the Kashmir Valley** lying on the Indian side of the border.

- If CPEC proves a success, will further consolidate the region's perception as internationally recognised Pakistani territory, **diminishing India's claim over the 73,000 sq km piece of land** which is home to more than 1.8 million people.

➤ **Chinese Control Over Trade Via Sea:**

- Major US ports on the East Coast depend on the **Panama Canal** to trade with China.
- Once CPEC becomes fully functional, China will be in a position to offer a **'shorter and more economical' trade route** to most North and Latin American enterprises, giving China the power to dictate the terms by which the international movement of goods will take place between the Atlantic and the Pacific oceans.

➤ **Chinese String of Pearls:**

- With an existing presence in Chittagong port (Bangladesh), Hambantota port (Sri Lanka), Port Sudan (Sudan), Maldives, Somalia and Seychelles, **a control of Gwadar port establishes complete dominance of the Indian ocean by the Communist nation**.

➤ **Stronger BRI and Chinese Dominance in Trade Leadership:**

- China's BRI project that focuses on the trade connectivity between China and the rest of Eurasia through a network of ports, roads and railways has been often seen as **China's plan to dominate the region politically**. CPEC is one giant step in the same direction.

3rd ASEAN

Digital Ministers Meeting

Why in News?

The 3rd ASEAN Digital Ministers (ADGMIN) meeting was held recently.

- The theme of the meeting was **"Synergy Towards a Sustainable Digital Future"**.

What are the Major Highlights of the Meeting?

- The meeting focused on **enhancing the relationship between India and ASEAN (Association of Southeast Asian Nations)** in the area of **Information and Communication Technologies (ICTs)**.

Note:

- India emphasised its reforms to promote fair competition, and **increase broadband and telecom connectivity**.
 - The **significance of digital transformation** was also highlighted as a means of creating an **inclusive and equitable society**, promoting sustainable development, and empowering citizens through digital means.
- **India-ASEAN Digital Work Plan 2023** was approved, which includes initiatives for **capacity building and knowledge sharing** in areas such as **Artificial Intelligence in Cybersecurity, IoT and AI in Next Generation Smart Cities**, and the **role of ICTs in implementing digital health and security**.

What is ASEAN Grouping?

➤ About:

- It is a **regional grouping** that promotes **economic, political, and security cooperation**.
- It was established in **August 1967 in Bangkok, Thailand** with the signing of the **ASEAN Declaration (Bangkok Declaration)** by the founding fathers of ASEAN, namely **Indonesia, Malaysia, Philippines, Singapore and Thailand**.
- Its **chairmanship rotates annually**, based on the alphabetical order of the English names of Member States.

➤ Members:



How is India's Relations with ASEAN?

➤ About:

- India and ASEAN have a long-standing and multi-faceted relationship that encompasses **political, economic, cultural, and security dimensions**.
- **Evolution of Bilateral Relations:**
 - **India-ASEAN bilateral relationship** started evolving since India introduced '**Look East Policy**' in **1990s**.
 - This initiative was further transformed to '**Act East Policy**' in **2014** mainly to develop **economic and strategic relations** with the nations of Southeast Asian countries.
 - In **1992**, India emerged as a **Sectoral Partner of ASEAN** followed by **Dialogue Partner** in **1996** and a **Summit-level Partner** in **2002**.
 - In **2009**, The **ASEAN-India Trade in Goods Agreement (AITIGA)** was signed and entered into force on **1 January 2010**.
 - **Also**, India has a **Comprehensive Economic Cooperation Agreement (CECA)** with various countries of the ASEAN region (**Singapore, Malaysia and Thailand**) which has resulted in concessional trade and a rise in investments.
 - In **2015**, India also set up a **separate Mission to ASEAN** and the **East Asia Summit in Jakarta in 2015** to strengthen engagement with ASEAN countries.
 - In **2022**, the **ASEAN India Friendship Year** was observed to commemorate the **30-year milestone of the establishment of dialogue relations** between ASEAN and India, leading to the elevation of their **Strategic Partnership to a Comprehensive Strategic Partnership (CSP)**.
- **Other Areas of Engagement:**
 - **Financial Assistance:**
 - **India offers financial support to ASEAN countries** through various channels such as the **ASEAN-India Cooperation Fund, the ASEAN-India Science and Technology Development Fund, and the ASEAN-India Green Fund**.
 - **Connectivity:**
 - India has been implementing several connectivity initiatives, such as the **India-Myanmar-Thailand Trilateral Highway** and the **Kaladan Multimodal Project**.
 - Additionally, India is working towards establishing a **Maritime Transportation Agreement with ASEAN** and has plans for a railway connection between **New Delhi, India and Hanoi, Vietnam**.

Note:

Canada's Indo-Pacific Strategy

Why in News?

Recently, India-Canada Foreign minister's Bilateral meeting as 'India-Canada strategic Dialogue' took place ahead of **G20** Foreign ministers' meeting in March in **New Delhi**.

- India welcomed the announcement of **Canada's Indo-Pacific Strategy** given the **shared vision of a free, open and inclusive Indo pacific**.



What are the Highlights of the Meeting?

- The Ministers discussed strengthening the economic partnership, advancing security cooperation, facilitating migration and mobility, and growing our strong people-to-people ties.
- Canadian FM termed **India as a critical partner** for Canada in the Indo-Pacific. In return, Canada can be a **reliable supplier of critical minerals**, a **strong partner in the green transition** and a **major investor**.

What is the Significance of the Meeting?

- Canadian FM's visit is expected to **pave the way for a continued reset** in India-Canada ties after a freeze between 2020-2022.
 - Freeze was over a **number of issues** including **attacks on Indian-origin people and establishments by Khalistani groups** in Canada, **Canadian comments over India's farmer protests** and **India's cancellation of diplomatic talks in response**.
 - In 2022, New Delhi objected to Canada permitting a **Khalistani secessionist "referendum"** and hit back with an advisory against travel in Canada that warned against hate crimes.
- Apart from encouraging investment from Canadian funds, both the countries look forward to the '**Early Progress Trade Agreement (EPTA)**' as a first step

towards '**Comprehensive Economic Partnership Agreement (CEPA)**'.

- The issue of **Khalistani activities** in Canada, which has contributed to the strained relationship between Canada and India, was **not addressed in any official statements**.
- As India's economy grows, its **strategic importance** will only increase, providing a greater opportunity for Canada and India to strengthen their relationship.
- Both countries share a **suspicion of China** and are **seeking to expand trade ties, improve supply chain resilience, and encourage greater exchange of people** between their countries.

What is Canada's Indo Pacific Policy?

- **About:**
 - Canada released a new Indo-Pacific strategy, **focusing on four regions: China, India, the North Pacific (Japan and Korea), and ASEAN**.
 - The **Indo-Pacific region is home to the largest diaspora in Canada**, with 1 in 5 Canadians having family ties to the region and **60% of Canada's international students**.
 - The strategy contains **strong words on China's challenge to the international rules-based order** and human rights, while expressing a **positive view of India's shared tradition of democracy and pluralism**.
 - However, Canada also acknowledges its dependence on China as its main export destination and recognizes the **need for cooperation with China** on issues such as climate change and health.
- **Funding:**
 - Canada's strategy includes a **funding commitment of \$1.7 billion** over five years, including **infrastructure projects, enhanced military presence, and expanded participation in regional military exercises**.
- **Objectives:**
 - Promote peace, resilience and security.
 - Expand trade, investment and supply chain resilience.
 - Invest in and connect people.
 - Build a sustainable and green future.
 - Be an active and engaged partner to the Indo-Pacific.

How are India- Canada Relations?

- **Political:**

Note:

- India and Canada share **commonalities in Parliamentary structure and procedures**. After the general election in October 2019, Mr Raj Saini, MP from the House of Common has been appointed as the Chair of the Canada-India Parliamentary Association.
- In India, **Canada is represented by the High Commission of Canada in New Delhi**.
- India is represented in Canada by a **High Commission in Ottawa** and by consulates in Toronto and Vancouver.
- **Economic:**
 - Bilateral trade between India and Canada stands at **USD 6.4 billion in 2020**. In 2021, **India was Canada's 14th largest export market, and 13th largest trading partner overall**.
 - More than 400 Canadian companies have a presence in India, and more than 1,000 companies are actively pursuing business in the Indian market.
 - Indian companies in Canada **are active in the field such as Information Technology, software, steel, natural resources and banking sectors**.
 - **India's exports to Canada** include pharma, iron and steel, chemicals, gem and jewelry, nuclear reactors and boilers.
 - Canada has **one of the world's largest resources of uranium, natural gas, oil, coal, minerals and advanced technologies in hydropower, mining, renewable energy and nuclear energy**.
- **Science and Technology:**
 - **Primary focus has been on promoting Industrial R&D (Research and Development) and development of new IP (Intellectual property) processes, prototypes or products**.
 - Department of Biotechnology **under IC-IMPACTS program implements joint research projects in health care, agri-biotech and waste management**.
 - IC-IMPACTS (the India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability) is the first, and only, **Canada-India Research Centre of Excellence**.
 - Department of Earth Science and Polar Canada have started a **programme for exchange of knowledge and scientific research on Cold Climate (Arctic) Studies**.
- **Space:**
 - **ISRO and Canadian Space Agency (CSA) have signed MOUs** in the field of exploration and utilization of outer space.
- **ANTRIX**, the Commercial arm of **ISRO**, has launched several nanosatellites from Canada.
- ISRO in its 100th Satellite **PSLV launched in 2018**, also flew Canadian first LEO (Low earth Orbit) satellite, from Indian spaceport Sriharikota.
- **Security and Defence:**
 - India and Canada **collaborate closely in international fora particularly through the UN, Commonwealth and G-20**.
 - A Statement of Intent (SoI) on Cooperation between DRDO and **Canada's Defence Research and Development Council has been signed in 2015**.
 - The security cooperation was further enhanced with the **Framework for Cooperation between India and Canada on Countering Terrorism in 2018**.
 - There is **substantial engagement on counter terrorism issues** particularly through the framework of the Joint Working Group (JWG) on Counter Terrorism.

What are the Key Facts about Canada?

- Canada is the **second largest country in the world** in area (after Russia), occupying roughly the northern two-fifths of the **continent of North America**.
- Canada is a **constitutional monarchy** and a **parliamentary democracy**,
 - Constitutional Monarchy means that the British monarch is the head of state, but her role is mainly **symbolic and ceremonial**, while the actual governing of the country is carried out by **elected representatives and government officials**.
- The border between the United States and Canada is primarily defined by the **49th parallel north**.
- Canada has a number of lakes including **Great Bear Lake, Great Slave Lake, Winnipeg Lake** and 5 great lakes on USA Border namely: **Superior, Michigan, Huron, Erie, and Ontario**.

Japan's Reaching Out to the Global South

Why in News?

Japan has taken the initiative to raise the Global South to the top of the **G7 agenda**.

Note:



- Japan is hosting G7 summit 2023 at Hiroshima. With India wanting to make the voice of the Global South heard at this year's **G20 summit**, there is much **new room for global political collaboration between Delhi and Tokyo**.

What is Global South?

- The term 'Global South' began by loosely referring to **those countries that were left out of the industrialisation era** and had a conflict of ideology with the capitalist and communist countries, **accentuated by the Cold War**.
 - It includes countries that are **mostly in Asia, Africa and South America**.
 - Moreover, Global North is defined essentially by an economic division between the rich and poor countries.
 - Global North' refers loosely to countries like the US, Canada, Europe, Russia, Australia and New Zealand.
- 'Global South' is significant because of its **large population, rich cultures, and abundant natural resources**.
- Understanding the Global South is important for addressing global issues such as **poverty, inequality, and climate change**.

What are the Concerns of the Global South?

- **Poverty and Inequality:**
 - Many countries in the Global South struggle with extreme poverty, which can **manifest in a range of issues such as malnutrition**, lack of access to education, and inadequate healthcare.
 - The Global South is often marked by significant inequalities, both within countries and between countries. For example, there may be significant **disparities in wealth and access to resources between urban and rural areas**, or between different ethnic or socioeconomic groups.
- **Environmental Challenges:**
 - Many countries in the Global South are **particularly vulnerable to environmental challenges** such as climate change, deforestation, and pollution. These issues can have a significant impact on the health and well-being of local communities.
- **Political Instability:**

- Political instability is one of the major issues in some countries in the Global South, with challenges **ranging from coups and civil wars** to corruption and weak governance.

➤ **Lack of Infrastructure, Education and Health:**

- Many countries struggle to provide **access to quality education for their populations**, which can limit economic opportunities and perpetuate poverty and inequality.
- Health issues are also a major concern, where **access to quality healthcare may be limited or non-existent**. This can lead to a range of health issues, including infectious diseases, malnutrition, and chronic conditions.

Why Does Japan Want to Reach Out to the Global South?

➤ **Japan Fears Ukraine-Like Implications:**

- Japan has transformed its foreign and security policies, since it fears similar **Ukraine-Like Implications**.
- The **Ukraine war**, coming on top of the long-standing threats from North Korea and mounting security challenges from China, has pushed **Japan towards sweeping reform of Japan's defence policy**.

➤ **Diplomacy and Defense:**

- Japan thinks that the war in Ukraine has made it recognise the **essential relationship between diplomacy and defence**.
- Diplomacy needs to be backed by defence capabilities and reinforcing defence capabilities will also lead to persuasiveness in carrying out our diplomatic efforts.

➤ **Acknowledging Negligence from West:**

- The West has neglected political engagement with the Global South in recent decades.
 - In the Cold War, the West competed fiercely with Russia for strategic influence across the Global South.
- After the collapse of the **Soviet Union**, the G7 simply took the **Global South for granted and was more interested in lecturing** rather than talking to the leaders of the Global South.
- This, in turn, left **much room for China and Russia to play** in the developing world.



Note:

Social Issues

Highlights

- NAMASTE Scheme
- Increasing Cases of Suicides in Educational Hubs
- Global Report on Neglected Tropical Diseases
- ChatGPT-Powered WhatsApp Chatbot

NAMASTE Scheme

Why in News?

Union Budget 2023-2024 has allocated nearly Rs 100 crore for the **National Action for Mechanized Sanitation Ecosystem (NAMASTE)** and the government is looking to enable **100% mechanical desludging of septic tanks and sewers in all cities and towns.**

- The process of extending the Scheme to all the **Urban Local Bodies (ULBs)** of the country has been initiated.

What is the NAMASTE Scheme?

- **About:**
 - It was launched in 2022 as a **Central Sector Scheme.**
 - The scheme is being undertaken **jointly by the Ministry of Housing and Urban Affairs and the Ministry of Social Justice & Empowerment (MoSJE)** and aims to eradicate unsafe sewer and septic tank cleaning practices.
- **Objectives:**
 - Zero fatalities in sanitation work in India.
 - All sanitation work is performed by skilled workers.
 - No sanitation workers come in direct contact with human faecal matter.
 - Sanitation workers are collectivised into **Self Help Groups (SHGs)** and are empowered to run sanitation enterprises.
 - Strengthened supervisory and monitoring systems at National, State and Urban Local Body (ULB) levels to ensure enforcement and monitoring of safe sanitation work.
 - Increased awareness among sanitation services seekers (individuals and institutions) to seek services from registered and skilled sanitation workers.

What are the Key Features of the Scheme to be Implemented in all ULBs?

- **Identification:** NAMASTE envisages identifying the Sewer/Septic Tank Workers (SSWs).
- **Occupational Training and distribution of PPE Kits to SSWs.**
- **Assistance for Safety Devices to Sanitation Response Units (SRUs).**
- **Extending Health Insurance Scheme Benefits** to identified SSWs and their families under the Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (AB-PMJAY).
- **Livelihood Assistance:** The Action Plan will promote mechanization and enterprise development by providing funding support and subsidy (capital +interest) to the sanitation workers, to procure sanitation related equipments.
- **IEC (Information Education and Communication) Campaign:** Massive campaigns would be undertaken jointly by the ULBs & NSKFDC (National Safai Karamcharis Finance & Development Corporation) to spread awareness about the interventions of NAMASTE.

What is Manual Scavenging?

- Manual scavenging is defined as “the removal of human excrement from public streets and dry latrines, cleaning septic tanks, gutters and sewers”.
- India banned the practice under the **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 (PEMSR).**
 - The Act recognizes manual scavenging as a “dehumanizing practice.”

What are the Steps taken to tackle the Menace of Manual Scavenging?

- **The Prohibition of Employment as Manual Scavengers and their Rehabilitation (Amendment) Bill, 2020:**

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- It proposes to completely mechanise sewer cleaning, introduce ways for 'on-site' protection and provide compensation to manual scavengers in case of sewer deaths.
- It will be an amendment to The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013.
- It is still awaiting cabinet approval.

➤ **The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013:**

- Superseding the 1993 Act, the 2013 Act goes beyond prohibitions on dry latrines, and outlaws all manual excrement cleaning of insanitary latrines, open drains, or pits.

➤ **The Building and Maintenance of Insanitary Latrines Act of 2013:**

- It outlaws construction or maintenance of insanitary toilets, and the hiring of anybody for their manual scavenging, as well as of hazardous cleaning of sewers and septic tanks.

➤ **Prevention of Atrocities Act:**

- In 1989, the Prevention of **Atrocities Act** became an integrated guard for sanitation workers, more than 90% people employed as manual scavengers belonged to the Scheduled Caste. This became an important landmark to free manual scavengers from designated traditional occupations.

➤ **SC Judgment:**

- In 2014, a **Supreme Court** order made it mandatory for the government to identify all those who died in sewage work since 1993 and provide Rs. 10 lakh each as compensation to their families.

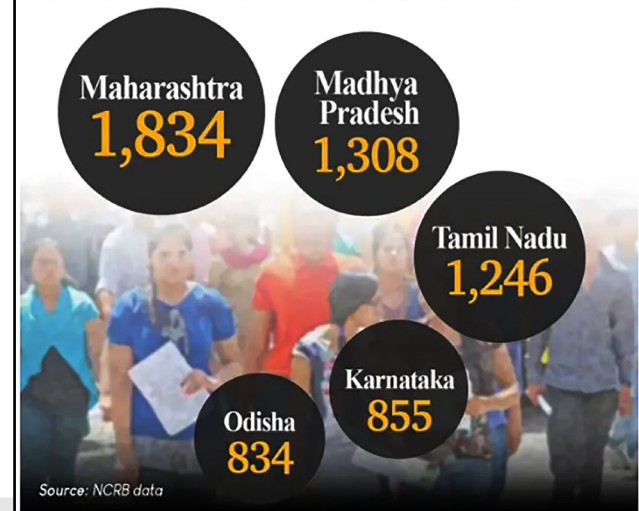
Increasing Cases of Suicides in Educational Hubs

Why in News?

The **National Crime Records Bureau's (NCRB's) Accidental Deaths and Suicide in India (ADSI) report 2021** shows student **suicides** had gone up drastically during the **Covid-19** pandemic in 2020 and 2021 and have been steadily rising in the last five years.

What is the Current Status of Suicides in Students?

TOP FIVE STATES WITH HIGHEST STUDENT SUICIDES IN 2021



➤ **Over 13,000 students died by in 2021 in India at the rate of more than 35 every day**, a rise of 4.5% from the 12,526 deaths in 2020 with **864 out of 10,732 suicides being due to "failure in examination"** according to the latest data as per NCRB's ADSI report 2021.

- **Since 1995, the country lost the highest number of students to suicides in 2021**, while nearly 2 lakh of them have died by suicide in the past 25 years.
 - The death by suicide of students has **increased by 32.15% since 2017**, when 9,905 students died by suicide.
- **Maharashtra had the highest number of student suicides in 2021** with 1,834, followed by Madhya Pradesh and Tamil Nadu.
- The report also showed the **percentage of women student suicide was at a five-year low of 43.49%**, while **men student suicides made up 56.51%** of the total student suicides.
 - In 2017, 4,711 women students died by suicide, while in 2021 such deaths increased to 5,693.
- As per **Ministry of Education, 122 students from IITs, NITs, central universities and other central institutions died by suicide over 2014-21.**
 - 68 of 122 belonged to the **scheduled castes (SC), scheduled tribes (ST) or other backward classes (OBC).**
- Suicides are a **growing concern in Kota, India, a hub for engineering and medical entrance exams preparation.**

Note:

- As of January 2023, **22 students have died** in Kota since **2022** and **around 121 have died** since **2011**.

What are the Factors that Increase Suicide Risk?

- **Academic Pressure:**
 - High expectations from parents, teachers and society can lead to excessive stress and pressure to perform well in exams.
 - This pressure to succeed can be overwhelming for some students, leading to feelings of failure and hopelessness.
- **Mental Health Issues:**
 - Mental health problems such as depression, anxiety, and bipolar disorder can contribute to student suicides.
 - These conditions can be exacerbated by stress, loneliness, and lack of support.
- **Isolation and Loneliness:**
 - Many students in educational hubs come from far away and live away from their families and friends.
 - This can lead to feelings of isolation and loneliness, which can be particularly difficult to deal with in an unfamiliar and competitive environment.
- **Financial Concerns:**
 - Financial difficulties, such as not being able to afford tuition fees or living expenses, can create a great deal of stress and worry for students.
 - This can lead to feelings of hopelessness and desperation.
- **Cyber Bullying:**
 - Cyber bullying and online harassment are becoming increasingly common and can contribute to student suicides.
 - Cyber bullying can take many forms, such as harassment, cyberstalking, or bullying through social media.
- **Substance Abuse:**
 - Substance abuse and alcohol abuse can contribute to student suicides. Substance abuse can lead to mental health problems, financial difficulties, and legal issues, all of which can be overwhelming for students.
- **Relationship Problems:**
 - Relationship problems, such as break-ups, family conflicts, and friendship issues can also contribute to student suicides.

- These problems can be particularly difficult to deal with for students who are far from home and have limited support.

➤ **Lack of Support:**

- Many students in educational hubs are reluctant to reach out for help when they are struggling.
 - This can be due to stigma surrounding mental health problems or a fear of being judged.
- This lack of support can lead to feelings of hopelessness and desperation.

What can be Done to Prevent Suicides?

➤ **Improved Mental Health Services:**

- Providing students with access to mental health services and resources such as counseling services, support groups, and psychiatric services can help prevent suicides.

- Also, schools and universities **must train teachers, staff, and students in mental health first aid**.

➤ **Embracing Positive Attitude towards Mental Health:**

- Positive attitudes towards mental health and help-seeking must also be promoted through **open discussions about mental health and suicide**.

➤ **Focus on Overall Personality Development:**

- By taking a holistic approach to personality development, educational institutions can create a **supportive and inclusive environment that helps students thrive both academically and emotionally**, and can play a critical role in preventing suicides.

➤ **Encouraging Participation in Sports:**

- Sports can play a role in preventing suicides in educational hubs by **providing a positive outlet for stress and emotions**, as well as increase self-esteem and confidence.

➤ **Addressing the Socio-economic Issues:**

- Socio-economic factors such as **poverty, homelessness, and unemployment should be addressed** to improve students' overall well-being and reduce stress, anxiety, and depression.

➤ **Stricter Cyber Bullying Policies:**

- Implementing stricter cyber bullying policies and cracking down on online harassment can help reduce the risk of student suicides.
 - This may include **monitoring social media sites, providing education about cyber bullying, and taking legal action** against cyber bullies.

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- **Substance Abuse Prevention Programs:**
 - Implementing substance abuse prevention programs can help reduce the risk of student suicides.
 - This may include **educating students about the dangers of substance abuse, providing support for those struggling with addiction**, and taking steps to reduce access to drugs and alcohol.
- **Building Positive Relationships:**
 - Encouraging students to **build positive relationships and connections, offering relationship counseling services**, and encouraging students to reach out for help can help reduce the risk of suicide.
- **Family Support:**
 - **Providing students with support from their families** can help reduce the risk of suicide.
 - This may include **offering support and resources for families, and encouraging students to maintain contact** with their families.

What are Related Initiatives to Reduce Suicides?

- **Global Initiatives:**
 - **World Suicide Prevention Day (WSPD):** Observed on **10th of September every year**, WSPD was established in **2003 by the International Association for Suicide Prevention (IASP)** in conjunction with the **WHO**. It focuses attention on the issue, reduces stigma and raises awareness among organizations, government, and the public, giving a singular message that suicide can be prevented.
 - **“Creating hope through action” is the triennial theme** for the WSPD **from 2021 - 2023**. This theme is a reminder that there is an alternative to suicide and aims to inspire confidence and light in all of us.
 - **World Mental Health Day: 10th October** is celebrated as **World Mental Health Day**, every year. The overall objective of World Mental Health Day is to **raise awareness of mental health issues around the world** and to mobilize efforts in support of mental health.
 - The theme of **World Mental Health Day 2022** is **“Making Mental Health & Well-Being for All a Global Priority”**.
- **Indian Initiatives:**
 - **Mental Healthcare Act (MHA), 2017:**
 - **MHA 2017** aims to **provide mental healthcare services** for persons with mental illness.

- **KIRAN:**
 - The **Ministry of Social Justice and Empowerment has launched a 24/7 toll-free helpline “KIRAN”** to provide support to people facing anxiety, stress, depression, suicidal thoughts and other mental health concerns.
- **Manodarpan Initiative:**
 - **Manodarpan** is an initiative of the Ministry of Education under **Atmanirbhar Bharat Abhiyan**.
 - It is aimed to **provide psychosocial support to students, family members and teachers** for their mental health and well-being during the times of Covid-19.
- **National Suicide Prevention Strategy:**
 - Announced in 2023, **National Suicide Prevention Strategy** is the first of its kind in the country, with time-bound action plans and multi-sectoral collaborations to **achieve reduction in suicide mortality by 10% by 2030**.
 - The strategy is in line with the **World Health Organisation’s South East-Asia Region Strategy for suicide prevention**.
 - **Its objectives are:**
 - The strategy broadly seeks to **establish effective surveillance mechanisms for suicide within the next three years**.
 - It seeks to **establish psychiatric outpatient departments** that will **provide suicide prevention services** through the District Mental Health Programme in all districts **within the next five years**.
 - It also aims to **integrate a mental well-being curriculum in all educational institutions** within the next eight years.
 - It envisages **developing guidelines for responsible media reporting of suicides, and restricting access to means of suicide**.

Global Report on Neglected Tropical Diseases

Why in News?

Recently, the **World Health Organization’s (WHO)** has released a **Global report on Neglected Tropical Diseases (NTD) 2023**, which states that NTD continues

Note:

to disproportionately impact the **most impoverished members of the international community.**

- World NTD day is observed every year on 30th January. It was declared in the **74th World Health Assembly (2021).**

What are Neglected Tropical Diseases (NTDs)?

- **About:**
 - NTDs are a group of infections that are most common **among marginalized communities** in the **developing regions of Africa, Asia and the Americas.**
 - They are caused by a **variety of pathogens** such as viruses, bacteria, protozoa and parasitic worms.
 - NTDs are especially common in tropical areas where people **do not have access to clean water or safe ways** to dispose of human waste.
 - These diseases generally receive less funding for research and treatment than **malaises like tuberculosis, HIV-AIDS and malaria.**
- **Examples of NTDs are: snakebite envenomation, scabies, yaws, trachoma, Leishmaniasis and Chagas disease etc.**

What are the Highlights of the Report?

- **Overview:**
 - About 16 countries accounted for 80 % of the global NTD burden.
 - Globally, nearly 1.65 billion people are estimated to **require treatment for at least one NTD.**
 - Covid-19 impacted the community-based initiatives, access to healthcare facilities and healthcare goods supply chains. As a result, between 2019 and 2020, **34% fewer persons received treatment for NTDs.**
- **Recommendations:**
 - Greater efforts and investments are **required to reverse delays and accelerate progress towards the NTD road map targets by 2030.**
 - WHO urged multi-sectoral collaboration and partnerships to **achieve these targets.**
 - It is the need of the hour for additional partners and funders to **step up and close the gaps preventing the full-scale implementation of NTD actions** at the international and local levels.

What are the Global Initiatives?

- **WHO's New Roadmap for 2021–2030:**
 - The NTD road map 2021–2030 is WHO's **blueprint to drive global efforts in the fight against NTDs** in the context of the United Nations **Sustainable Development Goals.**
 - **The Blueprint recommends following measures,**
 - From measuring **process to measuring impact.**
 - From disease-specific planning and programming to **collaborative work across sectors.**
 - From **externally driven agendas reliant to programmes that are country-owned** and country-financed.
 - **London Declaration on NTDs:** It was adopted on 30th January, 2012 to recognise the global burden of NTDs.

What are the Indian Initiatives to Eliminate NTDs?

- The **Accelerated Plan for Elimination of Lymphatic Filariasis (APELF)** was launched in 2018, as part of intensifying efforts towards the elimination of NTDs.
- A WHO-supported regional alliance established by the governments of India, Bangladesh, and Nepal in 2005 to expedite early diagnosis and treatment of the most vulnerable populations and improve disease surveillance and control of sandfly populations (**Kala-azar**).
- India has already eliminated several other NTDs, including guinea worm, trachoma, and yaws.
- Preventive methods like **Mass Drug Administration (MDA)** rounds are periodically deployed in endemic areas during which anti-filarial medicines are provided free-of-cost to at-risk communities.
- **Vector-control measures** like Indoor Residual Spraying rounds are undertaken in endemic areas to prevent sandfly breeding.
- The government also supports **morbidity management and disability prevention** for those affected by lymphoedema and hydrocele.
- State and central governments have also introduced wage compensation schemes for those suffering from Kala-Azar and its sequela (a condition which is the consequence of a previous disease or injury) known as **Post-Kala Azar Dermal Leishmaniasis.**



Note:

Science & Technology

Highlights

- Google's Bard: AI Generative Chatbot
- Generative Artificial Intelligence
- What are the Concerns Related to GAI?
- Critical and Emerging Technologies Dialogue
- Quasicrystals
- Micro-LEDs
- Muons Penetrate Ancient Xi'an Fortress Wall
- H5N1-Avian Influenza
- Combating Filariasis
- Sickle Cell Disease
- Cholera
- India's Nuclear Power Capacity
- Women in STEM
- Diyodar Meteorite
- NISAR Mission
- ISRO's SSLV-D2
- Space Debris
- Trans Fatty Acids

ChatGPT-Powered WhatsApp Chatbot

Why in News?

The Ministry of Electronics and IT's (MeitY) **BHASHINI** is working on a **ChatGPT-Powered WhatsApp Chatbot** to help Indian farmers learn about various government schemes.

- BHASHINI (BHASHa Interface for India) is India's **Artificial Intelligence (AI) led language translation platform**.
- The launch of the WhatsApp chatbot may take time as ChatGPT currently **relies on input in English**, and the support for local languages is limited.

What are the Intended Features?

- It will let users **send a question via voice notes**.
 - A user could simply ask a question using voice notes and receive a voice-based response generated by ChatGPT.
- The chatbot has been developing with the view of **India's rural and agrarian population** that most depend on **government schemes and subsidies**.
- These potential users speak a wide range of languages, which makes it **important to build a language model** that can successfully identify and understand them.
- This will help numerous farmers in India who may not be familiar with typing on smartphones.

- The ChatGPT-powered WhatsApp chatbot will support 12 languages, including English, Hindi, Tamil, Telugu, Marathi, Bengali, Kannada, Odia, and Assamese.
- The majority of those who will use this chatbot would not know English, for which the Government's **Bhasha Daan** Initiative will be used.
- Bhasha Daan is **an initiative to crowdsource language inputs for multiple Indian languages as part of Project BHASHINI**. It calls upon citizens to help build an open repository of data to digitally enrich his/her own language.

What are the Concerns Related to Such Models?

- Responses of generative AI models like ChatGPT, **Google's Bard** may **not always be accurate**.
 - Recently, **Bard** made a **factual error about James Webb Space Telescope**. The company's shares dropped by USD 100 billion **after the mistake was spotted**.
- In its current testing phase, the WhatsApp chatbot can **only respond to simple queries about government schemes**, etc.
- This is primarily due to the **current limitation of ChatGPT itself** — the fact that it **cannot access information from the Internet in real time**.
- ChatGPT's language model was trained on a **dataset that only includes information until 2021**.

Note:



- However, this could **soon change**. Recently, Microsoft announced a new version of its search engine Bing, powered by an upgraded version of the same **AI technology that underpins ChatGPT**.
- The feature will be powered by an updated version of GPT 3.5, the AI language model created by OpenAI that powers ChatGPT.
- It called this the **“Prometheus Model”**, and said it was more powerful than GPT 3.5 and better able to answer search queries with more up-to-date information and annotated answers.

What is ChatGPT?

➤ About:

- ChatGPT is a **variant of GPT (Generative Pre-trained Transformer)** which is a large-scale **neural network-based language model developed by OpenAI**.
- GPT models are **trained on vast amounts of text data** to generate human-like text.
- It can generate **responses to a wide range of topics**, such as answering questions, providing explanations, and engaging in conversations.
- In addition to being able to “admit its mistakes, challenge false premises, and refuse unsuitable requests,” the ChatGPT can also “answer follow-up questions.”
- The chatbot was also trained using **Reinforcement Learning from Human Feedback (RLHF)**.

➤ Usage:

- It can be used in **real-world applications such as digital marketing**, online content creation, answering customer service queries or as some users have found, even to help debug code.
- The bot can respond to a large range of questions while imitating human speaking styles.
- It is being seen as a **replacement for basic emails**, party planning lists, CVs, and even college essays and homework.
- It can also be used to write code, as **examples have shown**


Google’s Bard: AI Generative Chatbot

Why in News?

Google will soon unveil its new **AI chatbot Bard** in response to Microsoft’s **ChatGPT**.

BARD VS CHATGPT

	Bard	ChatGPT
Language model	LaMDA	GPT-3
Source of Information	Internet	Data feed
Information cutoff	None	2021
Access	Limited	Unlimited
Limitations	Biases of Internet	Biases of data



What is Bard?

➤ About:

- Bard is based on the Language **Model for Dialogue Application (LaMDA)**, Google’s own conversational AI chatbot.
- It will give in-depth, conversational and essay-style answers just like ChatGPT does right now.
- However, the model is currently a “lightweight” version of LaMDA, and the one being “requires significantly less computing power, enabling it to scale to **more users**.”

➤ Features:

- It is built on Transformer technology, which is **also the backbone of ChatGPT** and other AI bots.
 - Transformer technology was pioneered by Google and made **open source in 2017**.
- Transformer technology is a **Neural Network Architecture**, which is **capable of making predictions based on inputs** and is primarily used in natural language processing and computer vision technology.
 - The architecture determines how the network processes information and influences its accuracy and efficiency in solving a particular problem. Common architectures include feedforward networks, recurrent networks, and convolutional neural networks.

How is ChatGPT Different from Bard?

- ChatGPT has impressed with its ability to respond to complex queries — though with varying degrees of accuracy — but its **biggest shortcoming perhaps is that it cannot access real-time information** from the Internet.
 - But Microsoft just unveiled a **new version of Bing that’s powered by ChatGPT** which is a significant improvement of the version of ChatGPT.

Note:

- ChatGPT's language model was trained on a **vast dataset to generate text based on the input**, and the dataset, at the moment, **only includes information until 2021**.
- Whereas, for questions where there might not be a clear-cut answer, **Bard will synthesise a response that reflects differing opinions**.
 - For example, the question, "Is it easier to learn the piano or the guitar?" would be met with "Some say the piano is easier to learn, as the finger and hand movements are more natural. Others say that it's easier to learn chords on the guitar."

What are the Concerns of AI-Based Generative Chatbots?

- The text generation software from Google and OpenAI, while fascinating and eloquent, can be extremely prone to inaccuracies, experts have pointed out.
- The ability to search the Internet in real-time, including content such as hate speech and racial and gender biases and stereotyping, **could lead to problems, and take the sheen off these new products**.
- Even with natural language processing, they may not fully comprehend a customer's **input and may provide incoherent answers**.
- Many chatbots are also limited in the scope of queries that they are able to respond to.

Generative Artificial Intelligence

Why in News?

The use of **Generative Artificial Intelligence (GAI)** is still in its early stages but its impact is likely to grow as technology continues to evolve and improve.

- The Government of India is cognizant of the emergence of the technologies related to GAI and their rapid proliferation in sectors like education, manufacturing, healthcare, finance, and others.

What is Generative Artificial Intelligence?

- **About:**
 - GAI is a rapidly growing branch of AI that focuses on generating new content (such as images, audio, text, etc.) based on patterns and rules learned from data.

- The rise of GAI can be attributed to **the development of advanced generative models**, such as **Generative Adversarial Networks (GANs)** and **Variational Autoencoders (VAEs)**.
 - These models are trained on large amounts of data and are able to generate new outputs that are similar to the training data. For example, a GAN trained on images of faces can generate new, synthetic images of faces that look realistic.
- While GAI is often associated with **ChatGPT** and **deep fakes**, the technology was initially used to automate the repetitive processes used in digital image correction and digital audio correction.
- Arguably, because **machine learning** and deep learning are inherently focused on generative processes, they can be considered types of GAI, too.

➤ **Applications:**

- **Art and Creativity:**
 - It can be used to generate new works of art that are unique and innovative, **helping artists and creatives explore new ideas** and push the boundaries of traditional art forms.
 - **DeepDream Generator** - An open-source platform that uses deep learning algorithms to create surrealistic, dream-like images.
 - **DALL·E2** - This AI model from OpenAI generates new images from text descriptions.
- **Music:**
 - It can help musicians and music producers explore new sounds and styles, leading to more diverse and interesting music.
 - **Amper Music** - creates musical tracks from pre-recorded samples.
 - **AIVA** - uses AI algorithms to compose original music in various genres and styles.
- **Computer Graphics:**
 - It can generate new 3D models, animations, and special effects, helping movie studios and **game developers create more realistic and engaging experiences**.
- **Healthcare:**
 - By generating new medical images and simulations, improving the **accuracy and efficiency of medical diagnoses** and treatments.
- **Manufacturing and Robotics:**

Note:

- It can help optimize manufacturing processes, improving the efficiency and quality of these processes.

➤ **Significance for India:**

- As per NASSCOM data, the overall AI employment in India is estimated at about 416,000 professionals.
- The growth rate for the sector is estimated at about 20-25%. Further, AI is expected to contribute an additional USD 957 billion to India's economy, by 2035.

What are the Concerns Related to GAI?

➤ **Accuracy:**

- One of the biggest challenges is ensuring that the **outputs generated by GAI are of high quality and accurate.**
- This requires the **development of advanced generative models** that can accurately capture the patterns and rules learned from data.

➤ **Partisan GAI Models:**

- GAI models are trained on large amounts of data, and if that data is biased, the outputs generated by GAI may also be biased. This can lead to **discrimination and reinforce existing societal biases.**

➤ **Privacy:**

- Training GAI 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 GAI 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:**

- GAI 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.**

What are the Related Indian Initiatives?

➤ **National Strategy for Artificial Intelligence:**

- The Government has published the National Strategy for Artificial Intelligence with the objective of **developing an ecosystem for the research and adoption of Artificial Intelligence.**

➤ **National Mission on Interdisciplinary Cyber-Physical Systems:**

- Under this Mission, Technology Innovation Hubs (TIH) has been established on Artificial Intelligence and Machine Learning at the Indian Institute of Technology (IIT) Kharagpur, which aims to provide the state-of-the-art training and capacity building **for the creation of next-generation scientists, engineers, technicians, and technocrats in the field of Artificial Intelligence.**

➤ **Artificial Intelligence Research, Analytics and Knowledge Assimilation Platform:**

- It is a Cloud computing platform, aiming to **make India a pioneer amongst emerging economies with regards to AI** and transform sectors like education, health, agriculture, urbanization and mobility.

Critical and Emerging Technologies Dialogue

Why in News?

India's **National Security Advisor** hold talks with the US counterpart on the first dialogue on **Initiative for Critical and Emerging Technologies (iCET) in the US.**

- Completing the work on the long-awaited **NASA-ISRO Synthetic Aperture Radar (NISAR)** earth observation satellite is an excellent example of how the US-India partnership in space can benefit the world.

What is the iCET Initiative?

➤ **About:**

- The iCET initiative was launched by India and the US in May 2022, and is **being run by the National Security Councils** of both countries.
- Under iCET, the both countries have identified **six areas of cooperation which would include co-development and co-production**, that would gradually be expanded to **QUAD**, then to **NATO**, followed by Europe and the rest of the world.

Note:

- Under iCET, India is ready to share its core technologies with the US and expects Washington to do the same.
- **Six Areas of Cooperation:**
 - The six areas for cooperation are scientific research and development; **quantum** and **artificial intelligence**, defense innovation, space, advanced telecom which would include things like 6G and semiconductors.
- **Significance:**
 - iCET would forge **closer linkages between government, academia and industry of the two countries**.
 - The objective is to provide **cutting edge technologies** to the rest of the world which are affordable.
 - The launch of the ambitious iCET dialogue is seen as **“an alignment of strategic, commercial and scientific approaches”** in the field of technology.
 - This is eventually likely to be mirrored in the progress made in Quad – the informal grouping of four countries, Australia, Japan, India and the United States.

Who is a National Security Advisor (NSA) in India?

- The NSA is the **primary advisor to the Prime Minister of India**. He also presides over the **National Security Council (NSC)**.
 - The current NSA is Ajit Doval.
- The NSC of India is a **three-tiered organisation that oversees political, economic, energy and security issues of strategic concern**.
 - It was **formed in 1998**, where all aspects of national security are deliberated upon.
 - NSC operates within the executive office of the PM, liaising between the government’s executive branch and the intelligence services.

Quasicrystals

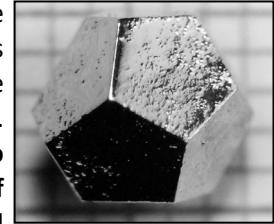
Why in News?

Scientists have discovered a **third natural source of quasicrystals in the Sand Hills of north central Nebraska, US**.

What are Quasicrystals?

- **About:**

- **Quasicrystals** are fascinating materials that possess a unique combination of properties. They are a **testament to the beauty and power of irregularity** in the natural world.



➤ Difference from Traditional Crystal:

- Unlike **traditional crystals**, the atoms in quasicrystals are arranged in a pattern that repeats itself at irregular intervals, rather than in a fixed, repetitive pattern.
 - This deviation from the normal arrangement of atoms in solids makes quasicrystals a **symbol of the power of irregularity**.
- **Common salt crystals**, like those of **Sodium chloride (NaCl)**, adopt a cubic pattern due to their chemical and physical properties.
 - The cubic pattern allows the sodium and chloride ions to **optimise for factors like density and thermal stability**.
- Quasicrystals, on the other hand, **form in a pattern that deviates from the cubic structure** and is less optimal.
 - The structure of their atomic lattice still contains the imprints of some stressful event.

➤ Application:

- They are used in manufacturing **non-stick frying pans**, needles for acupuncture and surgery, dental instruments and razor blades.

How were Quasicrystals Discovered?

- The discovery of quasicrystals was made by **American-Israeli scientist Dan Shechtman** in **1982** in the lab.
 - **Dan Shechtman received the 2011 Nobel Prize in Chemistry** for discovering quasicrystals.
- The **first natural quasicrystal was discovered in the Khatyrka meteorite** in Russia in 2009.
 - The Khatyrka meteorite is believed to have gone through **several collisions in space over millions of years**, which would have subjected it to intense pressure and heat.
 - Inspired by these conditions, physicists **conducted experiments to create new quasicrystals in the lab using “shock synthesis.”**

Note:

- In 2021, scientists discovered a **quasicrystal in the remains of the first-ever detonated atomic weapon, the Trinity test of the Manhattan Project.**
- These findings suggest that intense, fiery conditions like those experienced by the **Khatyrka meteorite and the Trinity test are the birthplace of natural quasicrystals.**

Micro-LEDs

Why in News?

Apple is reportedly **working on a new display technology called microLEDs**, which is considered the next big thing in the display industry.

- **MicroLEDs are self-illuminating diodes** that have brighter and better colour reproduction than **Organic Light Emitting Diode (OLED) display technology.**

What are MicroLEDs ?

➤ About:

- MicroLED technology is based on the **use of sapphires**, which are known for their ability to shine on their own indefinitely.
 - The technology involves the **use of tiny light-emitting diodes (LEDs) that are packed tightly together** to create a bright and high-quality display.
- Unlike OLED displays, **microLED displays use inorganic material** such as gallium nitride.
- A microLED is as **small as cutting a centimetre of hair into 200 smaller pieces**. Each of these microLEDs are semiconductors that receive electric signals.
 - Once these microLEDs are gathered, **they form a module**. Several modules are then combined to form screens

➤ Benefits:

- Brighter screens with **better colour reproduction** and viewing angles.
- **Limitless scalability**, as microLED displays are **resolution-free, bezel-free, ratio-free, and even size-free.**
- The ability to **freely resize the screen in any form** for practical usage.
- **Self-emissive microLEDs** that individually produce **red, green, and blue colours** without needing backlighting or colour filters.

➤ Challenges:

- **Manufacturing Complexity:** The process of manufacturing microLEDs is **highly complex**, and it **requires precise control** over many variables to produce high-quality displays.
- **Cost:** The **cost of manufacturing microLED displays is currently very high**, and it may take some time for the technology to become affordable enough for widespread adoption.
- **Power Consumption:** MicroLEDs require a lot of **power** to operate, which can make them **less energy-efficient** than other display technologies.

Muons Penetrate Ancient Xi'an Fortress Wall

Why in News?

As per a new study, researchers are **examining the fortress wall of Xi'an, an ancient city in China**, by using tiny outer space particles Muons that can penetrate hundreds of metres of stone surfaces.

- Scientists have used a muon detector, called **CORMIS (Cosmic Ray Muon Imaging System)**, to examine the wall of Xi'an city.

What are Muons?

➤ About:

- Muons are subatomic particles raining from space. They are **created when the particles in Earth's atmosphere collide with cosmic rays.**
 - **Cosmic rays** are the **clusters of high-energy particles** that move through space at almost the **speed of light.**
- According to Scientific American magazine, **"about 10,000 muons reach every square metre of the Earth's surface a minute"**.

➤ Properties:

- These particles **resemble electrons but are 207 times as massive**. Therefore, they are sometimes called **"fat electrons"**.
- Because muons are so heavy, **they can travel through hundreds of metres of rock or other matter before getting absorbed** or decayed.
 - In comparison, **electrons can penetrate through only a few centimetres.**

Note:

- Also, muons are highly unstable and **exist for just 2.2 microseconds**.

What is Muography?

- **About:**
 - The method of scanning large structures owing to the penetration power of muons is called **Muography**.
- **Applications of Muography:**
 - **Archaeology:**
 - With unique advantages, **muography has gained increasing attention from archaeologists** as a novel and innovative tool to **investigate large-scale archaeological sites**.
 - Example: The first use of muography was in the late 1960s when a **Nobel Prize-winning physicist named Luis Alvarez** teamed up with **Egyptologists** to look for **hidden rooms in the Pyramid of Khafre in Giza**.
 - **Other Applications:**
 - Muography has also found use in **customs security, internal imaging of volcanoes and others**.
 - In 2015, scientists used the technique to look inside the **Fukushima nuclear reactors after the 2011 earthquake and tsunami in Japan**.
 - It is also being used by researchers to analyze **Mount Vesuvius, a volcano in Italy**.

H5N1- Avian Influenza

Why in News?

Recent reports of **H5N1 (subtype of avian influenza)** being transmitted between **mammals** have raised concerns about its **potential to cause a human pandemic**.

- Scientists are investigating a **potential spillover event after a mass mortality event that killed over 700 seals along the Caspian Sea coast** where a H5N1 variant was detected in wild birds a few months ago.

What is H5N1 Avian Influenza?

- **About:**
 - **Avian influenza** or bird flu refers to the disease caused by **infection with avian influenza Type A viruses**.

- Infrequently, the **virus can infect mammals from birds**, a phenomenon called **spillover**, and rarely can spread between mammals.

- **H5N1, a subtype of avian influenza**, has the potential to infect other mammals such as **minks, ferrets, seals, domestic cats**, and others through contact with infected **birds, their faeces, or infected bird carcasses**.
- **Symptoms in Humans:**
 - Range from mild to severe influenza-like illnesses such as **fever, cough, sore throat, muscle aches, nausea, abdominal pain, diarrhea**, vomiting.
 - People can also develop severe respiratory illness (e.g., **difficulty breathing, pneumonia, acute respiratory distress, viral pneumonia**) and altered mental status, seizures etc.
- **Avian Influenza in India:**
 - In 2019, India has been declared free from **Avian Influenza (H5N1)**, which has also been notified to the **World Organization for Animal Health (OIE)**.
 - **However**, in December 2020 and early 2021, **outbreaks of avian influenza H5N1 and H5N8 were reported in poultry in 15 states in India**.
- **Treatment:**
 - Evidence suggests that some **antiviral drugs** can reduce the duration of viral replication and improve prospects of survival, however ongoing clinical studies are needed.
- **Concerns:**
 - The widespread H5N1 outbreaks have substantial economic impact, **resulting in significant losses to the poultry industry** and threatening **food and vaccine security**, apart from **raising animal welfare and environmental concerns**.

Types of Influenza Virus

- There are four types of influenza viruses: **influenza A, B, C, and D**
- Influenza A and B are the two types of influenza that **cause epidemic seasonal infections nearly every year**.
- Influenza C mainly occurs in humans, but has been known to also occur in dogs and pigs.
- Influenza D is found mainly in cattle. It's not known to infect or cause illness in humans yet.

Note:

Avian influenza Type A Viruses

- Type A viruses are classified based on two proteins on their surfaces – **Hemagglutinin (HA) and Neuraminidase (NA)**. There are about 18 HA subtypes and 11 NA subtypes.
- Several combinations of these two proteins are possible e.g., **H5N1, H7N2, H9N6, H17N10, H18N11 etc.**
- All known subtypes of influenza A viruses can infect birds, **except subtypes H17N10 and H18N11**, which have only been found in bats.

Types	A Subtypes	HPAI vs LPAI
Influenza A (Infects a wide range of animals including birds)	Avian (Can infect humans) H5N1 H7N3 H7N7 H7N9 H9N2 H10N8	HPAI H5N1 LPAI H5N1 HPAI H5N8 LPAI H5N8 Subtypes can be classified as high path or low path based on the ability of the specific virus strain to kill chickens in the lab setting.
Influenza B (Mainly infects humans)	Swine (Can infect humans)	
Influenza C (Infects humans and pigs but more rare than types A and B)	H1N1 H1N2 H3N2	
Influenza D (Infects cattle)	Most common human H1N1 H3N2	

Combating Filariasis

Why in News?

The Ministry of Health and Family Welfare has launched a nationwide **Mass Drug Administration (MDA) campaign** aimed at ending filariasis disease.

- India aims to **eliminate filariasis by 2027**, three years ahead of the global target.
- **High-burdened areas** are Bihar, Chhattisgarh, Jharkhand, Maharashtra, Uttar Pradesh, West Bengal, Karnataka, Odisha, Madhya Pradesh and Andhra Pradesh.

What is Filariasis?

- **About:**
 - Filariasis is a parasitic infection caused by microscopic, **thread-like worms known as filariae**. It is spread by the bite of infected mosquitoes, and it affects millions of people in tropical and subtropical regions worldwide.

Causes and Transmission:

- **Lymphatic filariasis** is caused by **infection with parasites classified as nematodes (roundworms)** of the family Filarioididea.
- There are 3 types of these thread-like filarial worms:
 - *Wuchereria bancrofti*, which is responsible for 90% of the cases,
 - *Brugia malayi*, which causes most of the remainder of the cases,
 - *Brugia timori*, which also causes the disease.

Symptoms:

- Lymphatic filariasis infection involves asymptomatic, acute, and chronic conditions.
 - In chronic conditions, it leads to **lymphoedema (tissue swelling) or elephantiasis (skin/tissue thickening) of limbs** and hydrocele (scrotal swelling).

Treatment:

- The **World Health Organization (WHO)** recommends three drug treatments to accelerate the global elimination of lymphatic filariasis. The treatment, known as **IDA**, involves a combination of **ivermectin, diethylcarbamazine citrate and albendazole**.
 - The plan is to administer these drugs for two consecutive years. The life of the **adult worm is hardly four years, so it would die a natural death without causing any harm to the person.**

What are the Related Initiatives?

- **WHO's New Roadmap for 2021–2030**
- **Global Programme to Eliminate Lymphatic Filariasis.**
- **National Symposium on Lymphatic Filariasis.**
- **National Health Mission**

Sickle Cell Disease

Why in News?

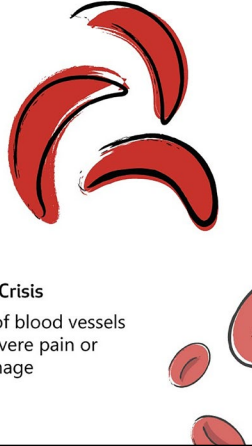
The **Government of India**, through the **National Health Mission**, is supporting the states in their **efforts to prevent and manage sickle cell disease**.

- In **Union Budget 2023-24**, the government has announced a mission to **eliminate Sickle cell Anaemia by 2047**.

Note:

What are Sickle Cell Disorders?

- A group of disorders that cause red blood cells to become misshapen and break down.
- The cells die early, leaving a short age of healthy red blood cells and can block blood flow causing pain.



Types:

Sickle Cell Anaemia

Dysfunctional red cells due to abnormal haemoglobin

Sickle Cell Crisis

Blockage of blood vessels causing severe pain or organ damage

What is Sickle Cell Disease (SCD)?

➤ About:

- **SCD** is a **chronic single gene disorder** causing a debilitating systemic syndrome characterized by **chronic anaemia, acute painful episodes, organ infarction and chronic organ damage** and by a significant reduction in life expectancy.

➤ Symptoms:

- Symptoms of sickle cell disease can vary, but some common symptoms include:
 - **Chronic Anaemia:** leading to fatigue, weakness, and paleness.
 - **Painful episodes** (also known as sickle cell crisis): these can cause sudden and intense pain in the bones, chest, back, arms, and legs.
 - **Delayed growth and puberty**

➤ Treatment:

- **Blood Transfusions:** These can help relieve anaemia and reduce the **risk of pain crises**.
- **Hydroxyurea:** This is a medication that can help **reduce the frequency of painful episodes** and prevent some of the long-term complications of the disease.
- It can also be treated by **bone marrow** or **stem cell transplantation**

➤ Government Initiatives to Tackle SCD:

- Government has released **technical operational guidelines** for **prevention and control of**

hemoglobinopathies in 2016 including sickle cell anaemia .

- Integrated centers have also been established in **22 tribal districts for treatment and diagnosis**.
- The **State Haemoglobinopathy Mission** has been established in **Madhya Pradesh** to address the challenges in screening and management of the disease.

Cholera

Why in News?

African countries are facing **Cholera vaccine shortage**, that is a looming threat amid increasing cholera cases in the region.

- Since the beginning of 2023, there have **been 27,300 new cases of cholera including 687 deaths** in five African countries.
- The **WHO (World Health Organization)** has said **Climate Change** could make cholera epidemics more common, as the bacteria that causes the disease can reproduce more quickly in warmer water.

What is Cholera?

➤ About:

- It is a life-threatening infectious **disease and a public health hazard**.
- Cholera is an acute, diarrheal illness caused by infection of the intestine with the **bacterium Vibrio cholerae**.
- The infection is often mild or without symptoms, but sometimes can be severe.

➤ Symptoms:

- Profuse watery diarrhoea, Vomiting, Leg cramps

➤ Transmission:

- A person may get **cholera by drinking water or eating food contaminated** with the cholera bacterium.
- The disease can **spread rapidly in areas with inadequate treatment** of sewage and drinking water.

➤ Vaccine:

- Currently there are three WHO pre-qualified **Oral Cholera Vaccines (OCV), Dukoral, Shanchol, and Euvichol-Plus**.
- All three vaccines require two doses for full protection.

Note:

What are the Initiatives to Curb Cholera?

- **A global strategy on cholera control, Ending Cholera:** a global roadmap to 2030, with a target to reduce cholera deaths by 90% was launched in 2017.
- **Global Task Force for Cholera Control (GTFCC):** WHO revitalized the Global Task Force for Cholera Control (GTFCC) to strengthen WHO's work in eradicating cholera.
 - The purpose of the GTFCC is to support increased implementation of evidence-based strategies to control cholera.

India's Nuclear Power Capacity

Why in News?

India's nuclear power capacity experienced a significant increase. By **2021-22**, it had risen to **47,112 Million Units**.

- In 2017, the government gave **simultaneous approval for 11 indigenous pressurised heavy water reactors** with a **total capacity of 7,000 MegaWatts**.

What is the Status of India's Nuclear Energy?

➤ About:

- Nuclear energy is the **fifth-largest source of electricity for India** which contributes about 3% of the total electricity generation in the country.
- India has over **22 nuclear reactors in 7 power plants** across the country which produces **6780 MW of nuclear power**. In addition, one reactor, **Kakrapar Atomic Power Project (KAPP-3)** has also been connected to the grid in January- 2021.
 - **18 reactors** are **Pressurised Heavy Water Reactors (PHWRs)** and 4 are **Light Water Reactors (LWRs)**.
 - **KAPP-3** is the India's first 700 MWe unit, and the biggest indigenously developed variant of the PHWR.

➤ Recent Developments:

- **Joint Ventures with Public Sector Undertakings (PSUs):**
 - Government has also allowed Joint Ventures with PSUs to **enhance India's nuclear program**.

- As a result, the **Nuclear Power Corporation of India Limited (NPCIL)** is now in two joint ventures with the **National Thermal Power Corporation Limited (NTPC)** and the **Indian Oil Corporation Limited (IOCL)**.

○ Expansion of Nuclear Installations:

- In the past, **India's nuclear installations were mostly located in South India** or in Maharashtra and Gujarat in the west.
 - However, the government is now **promoting its expansion to other parts of the country**. As an example, the upcoming **nuclear power plant in Gorakhpur town of Haryana**, which will become operational in the near future.

○ India's Indigenous Move:

- The world's first thorium-based nuclear plant, **"Bhavni,"** using **Uranium-233**, is being set up at **Kalpakkam in Tamil Nadu**.
- This plant will be **entirely indigenous and will be the first of its kind**. The experimental thorium plant **"Kamini"** already exists in Kalpakkam.

➤ Challenges:

- **Limited Domestic Resources:** India has **limited domestic resources of uranium**, which is the fuel for nuclear reactors.
 - This has **forced the country to import a significant portion of its uranium requirements**, making the country's nuclear energy program vulnerable to global market conditions and **political tensions**.
- **Public Opposition:** The construction of nuclear power plants often faces opposition from local communities due to **concerns over the safety of the reactors** and the potential **impact on the environment**.
- **Technical Challenges:** The development of nuclear power plants involves **complex technical challenges**, including the design and construction of reactors, the **management of nuclear waste**, and the **maintenance of nuclear safety standards**.
- **International Sanctions:** India is not a member of the Nuclear **Non-Proliferation Treaty (NPT)** and has faced international sanctions in the past for its nuclear weapons program.
 - This has **limited its access to advanced nuclear technology** and fuel supplies from other countries.

Note:

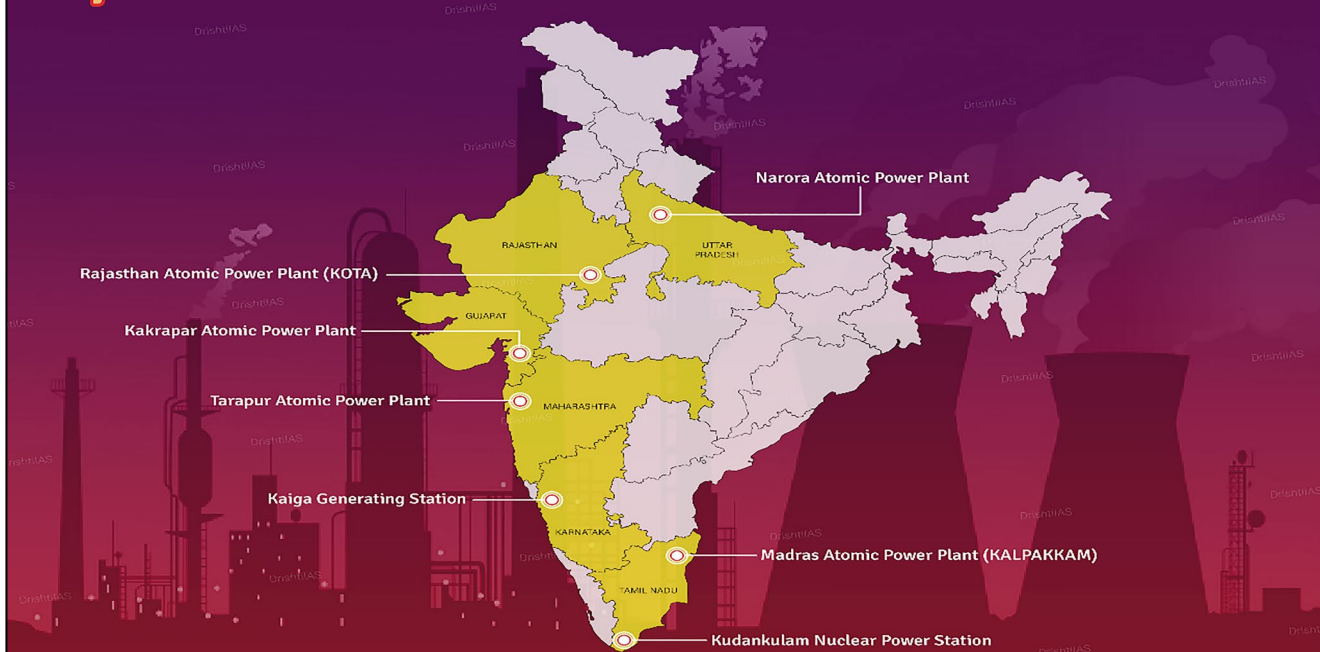
- **Regulatory Barriers:** The regulatory framework for the development of nuclear power in India is complex and has been criticised for being **slow and bureaucratic**, leading to delays in the implementation of projects.

How India Can Enhance its Nuclear Power Capacity?

- **Overcoming Public Opposition:** Addressing public concerns and increasing public awareness about the **safety of nuclear power** is critical to **overcoming opposition to the construction of new reactors**.
 - This can be achieved through **transparent communication and consultation with local communities**, as well as the implementation of rigorous safety standards.
- **Technical Innovation:** To overcome the technical challenges faced by the nuclear energy sector, **India needs to focus on innovation in reactor design, waste management, and safety systems**.

- This could involve **investment in research and development** and the deployment of advanced technologies.
- **Financial Sustainability:** To overcome the financial challenges faced by the nuclear energy sector, **India needs to find ways to make nuclear energy more cost-competitive** with other forms of energy.
 - This could involve **reducing construction and operation costs**, as well as developing innovative financing models.
- **Improving International Collaboration:** India needs to strengthen its international partnerships to **overcome the limitations posed by international sanctions and access to advanced nuclear technology** and fuel supplies.
 - This could involve the **development of joint ventures with other countries**, the participation in international research initiatives, and the negotiation of **nuclear trade agreements**.

Operational Nuclear Power Plants in India





FACTS

- Presently, India has 22 nuclear power reactors operating in 6 states, with an installed capacity of 6780 MegaWatt electric (MWe).
- Activities concerning the establishment and utilization of nuclear facilities and use of radioactive sources are carried out in India in accordance with the Atomic Energy Act, 1962.
- Atomic Energy Regulatory Board (AERB) regulates nuclear & radiation facilities and activities.
- **Newest & Largest Nuclear Power Plant:** Kudankulam Power Plant, Tamil Nadu.
- **First & Oldest Nuclear Power Plant:** Tarapur Power Plant, Maharashtra.



Note:

Women in STEM

International Day for Women and Girls in Science

ABOUT

- Celebrated **every year on February 11** since 2015
- Observed by the United Nation to **promote the full and equal access and participation of women in Science, Technology, Engineering and Mathematics (STEM)** fields.

THEME 2023

- Innovate. Demonstrate. Elevate. Advance. Sustain (I.D.E.A.S.)


STATUS OF WOMEN PARTICIPATION IN THE SCIENCE SECTOR

- According to the All India Survey on Higher Education 2020-2021, number of science researchers in India has doubled from 30,000 in 2014 to over 60,000 in 2022.
- Women's participation is the **highest in biotechnology at 40% and medicine at 35%**.

INITIATIVES TAKEN FOR WOMEN IN SCIENCE


- Gender Advancement for Transforming Institutions (GATI):**
 - To develop a comprehensive Charter and a framework for assessing Gender Equality in STEM.
- Vigyan Jyoti Scheme:**
 - To create a level-playing field for the meritorious girls in high school to pursue STEM in their higher education.
- Indo-US Fellowship for Women in STEM (WISTEMM) program:**
 - Women scientists can work in research labs in the US.
- Consolidation of University Research for Innovation and Excellence in Women Universities (CURIE) Programme:**
 - Improving R&D infrastructure and establishing state-of-the-art research facilities in order to create excellence in S&T in women universities.

Women who Shaped India's Scientific History




Anandibai Gopalrao Joshi (1865-1887)

- First Indian female to study and graduate with a degree in western medicines from the United States.
- Believed to be the **first women to set foot on American soil from India.**




Kamala Sohonie (1911-1998)

- First Indian woman to receive a PhD in a scientific discipline.
- Discovered the enzyme **'Cytochrome C'** (helps in energy synthesis).




Kadambini Ganguly (1861-1923)

- Becomes **India's first female doctor & practitioner** of western medicine in the whole South Asia.




Anna Mani (1918-2001)

- First woman to join the **Meteorological department.**




Bibha Chowdhary (1913-1991)

- First woman **high energy physicist of India and the first woman scientist at the TFIR.**
- IAU honoured her by naming a white yellow dwarf star after her name.




Kamal Ranadive (1917-2001)

- Established **India's first tissue culture research laboratory** at the Indian Research Centre in Mumbai.




Sanghamitra Bandyopadhyay

- She **has been conferred the Padma Shri in 2022.**
- She is the first woman director of the Indian Statistical Institute.




Edavaleth Kakkat Janaki Ammal (1897-1984)

- Made significant contributions to genetics, evolution, phytogeography and ethnobotany.
- First director of the **Central Botanical laboratory at Allahabad.**



Ms. Sujatha Ramdarai

- She was **awarded the Padma shri award in 2023.**
- She became the **first Indian to win the prestigious ICTP Ramanujan Prize in 2006.**
- She was also awarded the **Shanti Swarup Bhatnagar Award**, the highest honour in scientific fields by the Indian Government in 2004.
- She is also the **recipient of the 2020 Krieger-Nelson Prize** for her exceptional contributions to mathematics research



Debala Mitra (1925-2003)

- First **Indian archaeologist** served as Director General of the Archaeological Survey of India.
- Explored and excavated several **Buddhist sites.**

Diyodar Meteorite

Why in News?

Scientists from **Physical Research Laboratory (PRL), Ahmedabad**, are claiming that the meteorite that crashed in two villages in Banaskantha, Gujarat on August 17, 2022, has been identified as an **aubrite**.

- The **PRL group used a gamma-ray spectrometer** to determine the mineral composition of aubrite. The group also classified the meteorite as a **monomict breccia**.

What are the Major Highlights Related to Aubrite?

- Aubrite meteorite is a **coarse-grained igneous rock that formed in oxygen-poor conditions and contains exotic minerals not found on Earth.**
 - For example, the mineral **heideite** was first described in the Basti meteorite.
- India has seen hundreds of **meteorite crashes**, but this is **only the second recorded crash of an aubrite**. The meteorite has been named the **Diyodar meteorite** after the taluka in which the villages are located.
 - The last crash of an aubrite before this was in **Basti, Uttar Pradesh on December 2, 1852.**
- Around 90% of the meteorite was **composed of orthopyroxene**. Pyroxenes are silicates consisting of single chains of silica tetrahedra (SiO₄); orthopyroxenes are pyroxenes with a certain structure.
 - Pyroxenes such as **diopside and jadeite have been used as gems. Spodumene** was historically used as lithium ore. Rocks with pyroxene have also been used to make crushed stone that is used in construction.
- Aubrites have crashed in at **least 12 locations worldwide since 1836, including 3 in Africa and 6 in the U.S.**

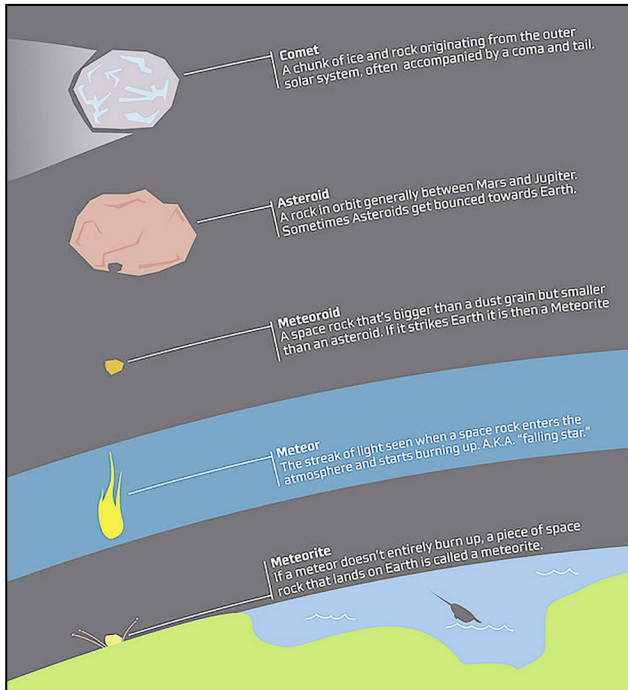
What is a Meteorite?

About:

- A meteorite is a **solid piece of debris from space** that survives its passage through the **Earth's atmosphere and lands on the Earth's surface.**

Note:

- **Difference between Meteor, Meteorite and Meteoroid:**
 - The difference between a **meteor, meteorite and meteoroid** is nothing but where the object is.
 - Meteoroids are objects in space that range in size from dust grains to small **asteroids**.
 - But when meteoroids enter the Earth's atmosphere, they are called **meteors**.
 - But if a meteoroid enters the Earth's atmosphere and hits the ground, it is called a **meteorite**.



What is a Gamma Ray Spectrometer?

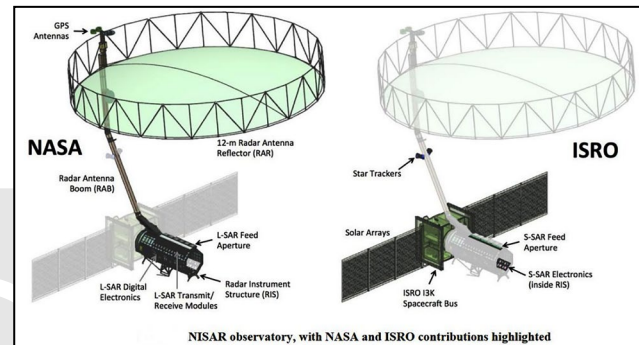
- **Gamma ray spectrometers** are scientific instruments used to **measure the energy distribution of gamma rays** emitted by radioactive materials.
 - They consist of a **detector, electronics, and software to analyse the data**.
- The resulting gamma ray spectrum can be **used to identify the radioactive isotopes** present and their relative abundance.
- Gamma ray spectrometers are used in a variety of applications, including **environmental monitoring, geology, and nuclear physics**.
- They can be **used to detect and measure the radiation emitted by natural sources, such as rocks and soils, as well as anthropogenic sources, such as nuclear power plants and medical facilities**.

NISAR Mission

Why in News?

Recently, **NISAR (NASA-ISRO Synthetic Aperture Radar)** has received a send-off ceremony at the **NASA's (National Aeronautics and Space Administration) Jet Propulsion Laboratory (JPL)** in California, USA.

- NISAR will be the **first radar of its kind in space to systematically map Earth**, using two different radar frequencies (L-band and S-band) to **measure changes in our planet's surface less than a centimeter across**.



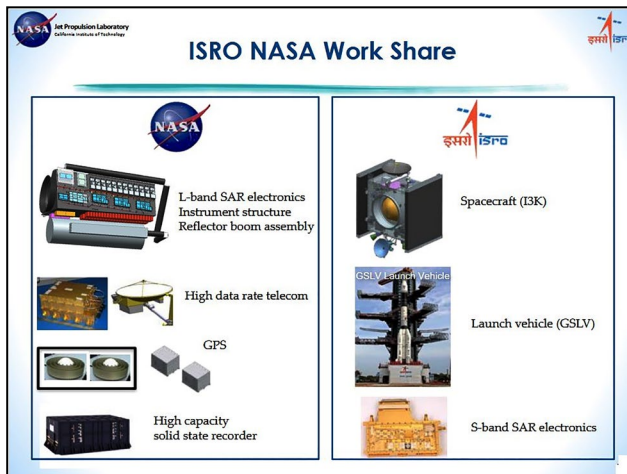
What is the NISAR Mission?

- **About:**
 - NISAR has been built by space agencies of the US and India under a partnership agreement signed in 2014.
 - It is expected to be launched in January 2024 from Satish Dhawan Space Centre into a **near-polar orbit**.
 - The satellite will operate **for a minimum of three years**.
 - It is a **Low Earth Orbit (LEO)** observatory.
 - NISAR will **map the entire globe in 12 days**.
- **Features**
 - It is a 2,800 kilograms satellite consisting of both **L-band and S-band Synthetic Aperture Radar (SAR)** instruments, which makes it a **dual-frequency imaging radar satellite**.
 - While **NASA has provided the L-band radar, GPS, a high-capacity solid-state recorder to store data, and a payload data subsystem, ISRO (Indian Space Research Organisation) has provided the S-band radar, the Geosynchronous Satellite Launch Vehicle (GSLV) launch system and spacecraft**.
 - S band radars operate on a wavelength of 8-15 cm and a frequency of 2-4 GHz. Because of the wavelength and frequency, they are **not easily**

Note:

attenuated. This makes them useful for near and far range weather observation.

- It has a **39-foot stationary antenna reflector**, made of a gold-plated wire mesh; the **reflector will be used to focus “the radar signals emitted and received by the upward-facing feed** on the instrument structure.
 - By using SAR, NISAR will produce **high-resolution images**. SAR is **capable of penetrating clouds** and can collect data day and night regardless of the weather conditions.
- NASA requires the L-band radar for **its global science operations** for at least three years. Meanwhile, ISRO will utilise the S-band radar for a minimum of five years.



What are the Expected Benefits of NISAR?

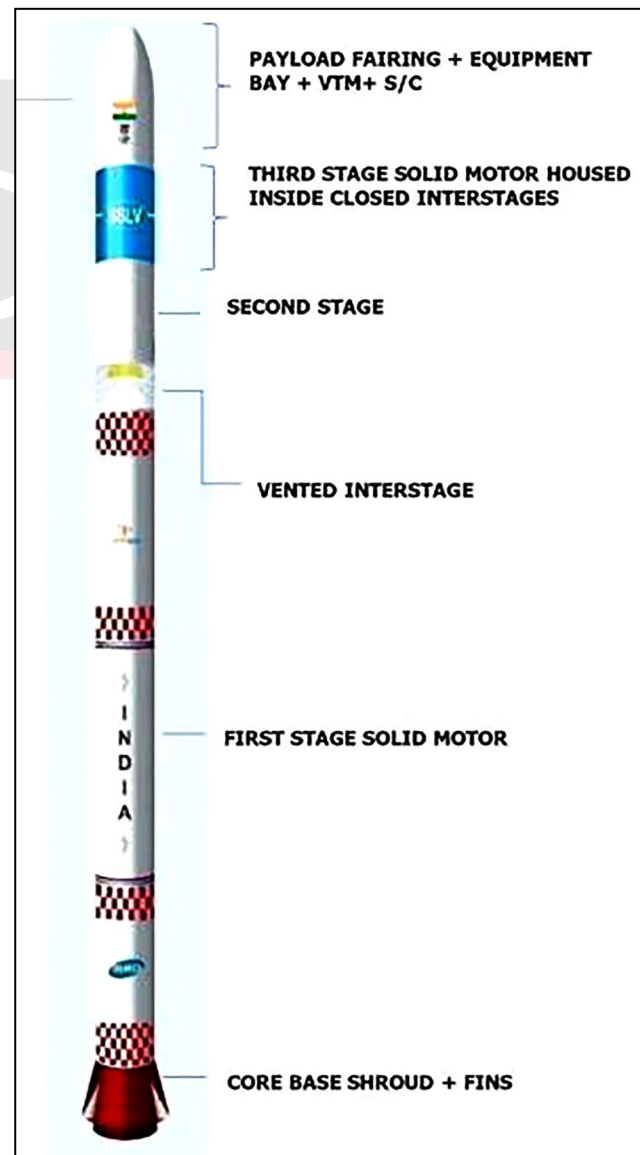
- **Earth Science:** NISAR will provide a **wealth of data and information about the Earth’s surface** changes, natural hazards, and ecosystem disturbances, helping to advance our understanding of Earth system processes and climate change.
- **Disaster Management:** The mission will provide critical information to help **manage natural disasters such as earthquakes, tsunamis, and volcanic eruptions**, enabling faster response times and better risk assessments.
- **Agriculture:** NISAR data will be used to improve **agriculture management and food security** by providing information about crop growth, soil moisture, and land-use changes.
- **Infrastructure Monitoring:** The mission will provide data for infrastructure monitoring and management, such as **monitoring of oil spills, urbanization, and deforestation**.
- **Climate Change:** NISAR will help to monitor and understand the impacts of climate change on the Earth’s land surface, including **melting glaciers, sea-level rise, and changes in carbon storage**.

ISRO's SSLV-D2

Why in News?

In its second attempt, the **Indian Space Research Organisation (ISRO)**'s smallest vehicle, **Small Satellite Launch Vehicle (SSLV-D2)**, was launched from the Satish Dhawan Space Centre, Sriharikota, Andhra Pradesh.

- The **vehicle’s first development flight (SSLV D1)** that took place in August 2022 failed to place the satellites in precise orbit.
- This time **structural changes have been made to the equipment bay**, along with changes in the separation mechanism for stage 2, and logic changes for the on-board system.



Note:

Note:

- A new vehicle is declared operational by ISRO after it completes two successful development flights.
- The last vehicle to be declared operational was the **GSLV Mk III**, now called **LVM 3**, when it carried **Chandrayaan-2** in 2019.

What's Onboard in SSLV-D2?

- SSLV-D2 will place the ISRO's **earth observation satellite EOS-07** and two co-passenger satellites - **Janus-1** and **AzaadiSat2**.
 - **Janus-1:**
 - It is a technology demonstrator satellite built by US-based Antaris and its Indian partners XDLinks and Ananth Technologies.
 - It is a **six-unit cube satellite** with five payloads on board — two from Singapore, and one each from Kenya, Australia, and Indonesia.
 - **AzaadiSat2:**
 - It is a **Cubesat** weighing around 8 kg and carries 75 different payloads.
 - Girl students from rural regions across the country were provided guidance to build these payloads.
 - The payloads are integrated by the student team of "Space Kidz India".
 - **EOS-07:**
 - EOS-07 is a **156.3 kg satellite designed and developed** by ISRO.
 - Its mission objective is to design and develop payload instruments compatible with microsatellite buses and new technologies for future operational satellites.

What is a Small Satellite Launch Vehicle?

- **About:**
 - SSLV is a **3 stage Launch Vehicle** configured with three Solid Propulsion Stages and Liquid propulsion-based Velocity Trimming Module (VTM) as a terminal.
 - It is **2 m in diameter and 34m in length** with a lift off weight of 120 tonnes and is capable of launching a **10 to 500 kg satellite in 500 km planar orbit**.
 - The rocket **can be assembled by a small team in only a few days**, compared to the 6 months and around 600 people it takes for ISRO's workhorse **PSLV**.

Objective:

- It has been developed to **capture the emerging small (nano-micro-mini) satellite** commercial market, with launches offered on demand.

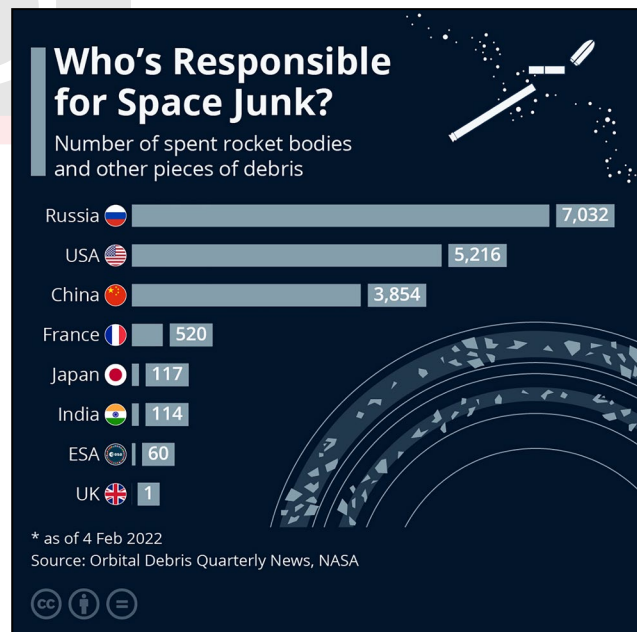
Significance:

- It provides **low-cost access to Space**, offers **low turn-around time**, facilitates **flexibility** in accommodating multiple satellites and demands minimal launch infrastructure.

Space Debris**Why in News?**

Recently, the **Government of India** has announced that **111 payloads and 105 space debris** have been identified as Indian objects orbiting Earth.

- **All orbiting debris will affect the future of outer space and future missions.** **Indian Space Research Organization (ISRO)** has also been carrying out several studies on the impact of growing **space debris** on the space environment.

**What is Space Debris?****About:**

- **Space debris** refers to **man-made objects in Earth's orbit** that no longer serve a useful purpose.
 - This includes **defunct satellites, spent rocket stages, and fragments of debris** from collisions or other events.


Note:


- **Potential Hazard:**
 - **Threat for Operational Satellites:**
 - The floating space debris is a **potential hazard for operational satellites** and colliding with them can leave the **satellites dysfunctional**.
 - This **overpopulation of space with objects and debris** is referred to as **Kessler Syndrome**.
 - **Reduction of Orbital Slots:**
 - The accumulation of space debris in specific orbital regions can **limit the availability of desirable orbital slots** for future missions.
 - **Space Situational Awareness:**
 - The **increasing amount of space debris** makes it **more challenging for satellite operators** and space agencies to accurately track and predict the orbits of objects in space.
- **Initiatives to Curb Space Debris:**
 - **India:**
 - In 2022, **ISRO set up the System for Safe and Sustainable Operations Management (IS 4 OM)** to continually monitor objects posing collision threats, predict the evolution of space debris, and mitigate the risk posed by space debris.
 - **ISRO also carried out 21 collision avoidance manoeuvres of Indian operational space assets in 2022** to avoid collisions with other space objects.
 - ISRO has also set up a **Centre for Space Debris Research to monitor and mitigate the threat** of space debris.

- **'Project NETRA'** is also an **early warning system** in space to detect debris and other hazards to Indian satellites.
- **Global:**
 - The **Inter-Agency Space Debris Coordination Committee (IADC)**, an international governmental forum, was established in 1993 to **coordinate efforts between spacefaring nations** to address the issue of space debris.
 - The **United Nations** has established the Committee on the **Peaceful Uses of Outer Space (COPUOS)** to develop guidelines for the **long-term sustainability of outer space activities**, including the mitigation of space debris.
 - The **European Space Agency (ESA)** has launched the **Clean Space initiative**, aimed at reducing the amount of space debris and promoting sustainable space activities.

Trans Fatty Acids

TRANS FATTY ACIDS (TFA)





Drishti IAS

These are unsaturated fatty acids that come from either natural or industrial sources.

FATS

Trans Fats

Saturated Fats

Unsaturated Fats

Fat	A major source of energy and helps body absorb vitamin
Unsaturated Fats	Good fats; usually come in the form of liquid oils, not solid fats. <ul style="list-style-type: none"> ● From Plants (Vegetable oil, nuts, seeds)
Saturated Fats	Not as harmful as trans fats if consumed in moderation; generally take a solid form <ul style="list-style-type: none"> ● From red meat, butter, cheese, coconut oil, palm oil

- **Natural TFA:**
 - Beef fat and dairy fat in small amounts
- **Industrial TFA:**
 - Trans fats, also called partially hydrogenated oils, are created when hydrogen is added to vegetable oil to make it more solid.
 - E.g. Vanaspati, margarine and bakery shortenings
- **Issue Associated:**
 - Most harmful fats, increase disease risk, even if consumed in small quantities
 - ↑ bad LDL (low-density lipoprotein) and ↓ good HDL

DEBATE ON TRANS FATS

<p style="margin: 0;">ARGUMENTS FOR:</p> <ul style="list-style-type: none"> ● Natural form of trans fat not harmful to humans ● Cheap and easy substitute of Pure Ghee ● Preserves food for longer duration 	<p style="margin: 0;">ARGUMENTS AGAINST:</p> <ul style="list-style-type: none"> ● Worst type of fat for the heart, blood vessels, rest of the body ● Associated with obesity, infertility, certain types of cancers, high B.P. ● Saturated vegetable fats like palm, palm kernel, and coconut oils can be suitable alternatives
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WHO estimates that 50,00,000 lives are lost due to premature deaths from coronary heart disease which are attributable to consumption of trans-fats.

EFFORTS TO REDUCE TFA INTAKE:

<p style="margin: 0;">By FSSAI:</p> <ul style="list-style-type: none"> ● Goal of "Freedom from Trans Fat @75" ● "Trans Fat Free" logo - Voluntary labelling to promote TFA-free products ● "Heart Attack Rewind" - Mass media campaign to eliminate industrially produced trans fats 	<p style="margin: 0;">By WHO:</p> <ul style="list-style-type: none"> ● REPLACE Campaign - Eliminate industrially produced trans fats by 2023 ● Recommendation - Set limits on industrially produced trans fat or ban partially hydrogenated oils
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Note:

Environment & Ecology

Highlights

- Magnetite Pollution
- World Likely to See 2°C Warming by 2050
- Global Sea-level Rise and Implications: WMO
- Elephant Reserves
- Keoladeo National Park
- International Marine Protected Areas Congress
- Green Steel

Magnetite Pollution

Why in News?

Recently, some Geologists have found the presence of Magnetite Pollution on the roadside Dust of Kolkata.

- The frequency of pollutants is **higher in areas with heavy vehicular traffic** and other polluting sources. The amount of magnetite is proportional to the traffic on a given road.

What is Magnetic Pollution?

- **About:**
 - Magnetite pollution refers to the presence of a magnetic mineral called **Magnetite (Fe₃O₄) in the environment**, as a result of **human activities such as mining, steel production and industrial processes**.
 - Magnetite is an oxide of iron. It is the **most magnetic of all the naturally occurring minerals** on earth. It is a natural magnet.
 - Magnetite contains about **72% metallic iron in it**. It is found in Karnataka, Andhra Pradesh, Rajasthan, Tamil Nadu, Goa and Kerala.
- **Impact:**
 - **Ecological Impacts:**
 - Magnetic particles can **interfere with the migratory patterns of birds** and other animals, affecting their survival and reproduction.
 - **Soil and Water Contamination:**
 - Magnetite particles **can settle in the soil and water, contaminating these environments** and affecting the growth of plants and the health of aquatic life.

Human Health:

- Inhaling magnetic particles can **cause respiratory problems and other health problems**, such as lung cancer, cardiovascular disease, and central nervous system damage.

Building and Infrastructure Damage:

- Magnetic particles can **cause corrosion of steel structures and other metal objects**, leading to damage over time.

Electronic Equipment Damage:

- Magnetic pollution can also interfere with the operation of electronic equipment, such as **compasses and navigation systems**.

World Likely to See 2°C Warming by 2050

Why in News?

Recently, a study published titled “**contradicted projections from the Intergovernmental Panel on Climate Change (IPCC)**”, states that the planet is **likely to warm up by two degrees Celsius by 2050**, even under a low-emission scenario.

- The researchers used **artificial intelligence** called **Artificial Neural Networks (ANN)** to predict the time for reaching the 1.5 °C and 2°C thresholds.
- The world has recorded a **1.1°C rise in temperature compared with the average in 1850-1900**.

What are the Key Findings?

- **Projection:**
 - There is a higher likelihood that 2°C will be reached under the low emission scenario compared with

Note:

the IPCC AR6 (Sixth Assessment Report) synthesis assessment, and may fail to uphold the Paris Agreement.

- The Paris Agreement aims to limit the rise to below 2°C while pursuing efforts to limit the increase to 1.5°C.
 - The IPCC estimated that the 1.5°C threshold could be attained as early as the 2030s under all emission scenarios.
- Global warming is already on the verge of crossing the 1.5°C threshold, even if the **climate forcing pathway is substantially reduced** in the near term.
- The threshold of 1.5°C will reach somewhere between 2033 and 2035 in the **high, intermediate and low forcing scenarios**.
- The **world could touch 2°C by 2050 under the high-emission scenario**, 2049 and 2054 in the intermediate and low-emission scenarios, respectively.
- In contrast, the IPCC estimated the likelihood of touching 2°C of global warming during the **mid-21st century is high under a high-emission scenario**.
- **Significance of Limiting Warming:**
- Limiting warming to 1.5°C will **reduce the number of people frequently exposed to extreme heat waves** by about 420 million.
 - It can also **reduce the probability of drought and risks related to water availability**.
- **Implications:**
- Warming above the threshold of 1.5°C can cause a **broad range of climate risks** — such as impacts on human health, economic growth, crop yields, coastal and small island communities, terrestrial and marine ecosystems, as well as the **frequency, intensity and cost of extreme climate events**.

What are Artificial Neural Networks?

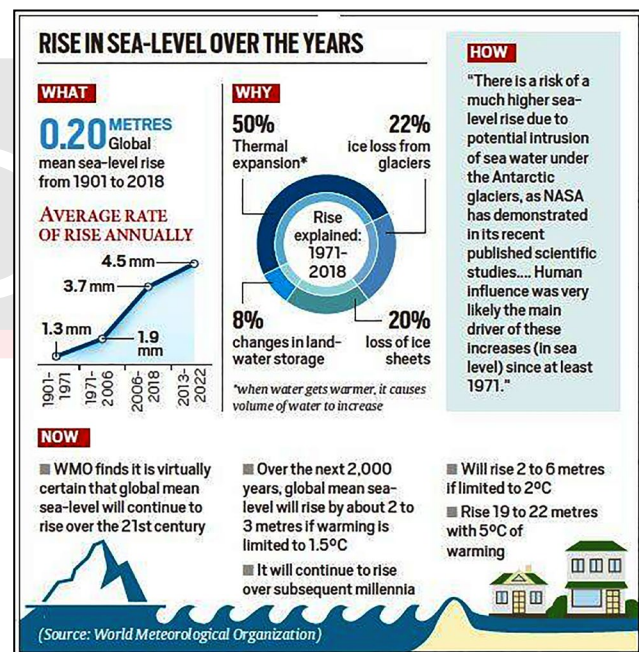
- ANN is a vital **subset of machine learning** that helps computer scientists in their work on complex tasks, such as, strategizing, making predictions, and recognizing trends.
- It is a **computational model that mimics the way nerve cells work in the human brain**. It is designed to simulate the way the human brain analyzes and processes information.

Global Sea-level Rise and Implications: WMO

Why in News?

According to the **World Meteorological Organisation's (WMO)** Report "Global Sea-level Rise and Implications", **India, China, Bangladesh and the Netherlands** face the **highest threat of sea-level rise globally**.

- Several big cities on all **continents are threatened by the rise in sea level**.
- These include Shanghai, Dhaka, Bangkok, Jakarta, Mumbai, Maputo, Lagos, Cairo, London, Copenhagen, New York, Los Angeles, Buenos Aires and Santiago.



What are the Highlights of the Report?

- **Trends and Projections:**
 - Between 2013 and 2022, Global mean sea-level was 4.5 mm/year and **human influence** was likely the **main driver of these increases since at least 1971**.
 - Global mean sea-level increased by 0.20m between 1901 and 2018,
 - **1.3 mm/ year between 1901 and 1971,**
 - **1.9 mm/year between 1971 and 2006**
 - **3.7 mm/year between 2006 and 2018.**

Note:

- Even if global heating is limited to 1.5 degrees Celsius over pre-industrial levels, there will still be a **sizable sea level rise**.
- But every fraction of a degree counts. If temperatures rise by 2 degrees, that level rise **could double, with further temperature increases bringing exponential sea level increases**.
- **Contributors to Sea Level Rise:**
 - Thermal expansion contributed to **50% of sea level rise during 1971-2018**, while ice loss from glaciers contributed to **22%, ice-sheet loss to 20% and changes in land-water storage 8%**.
 - The rate of ice-sheet loss increased by a factor of four between 1992-1999 and 2010-2019. Together, icesheet and **glacier mass loss were the dominant contributors** to global mean sea level rise during 2006-2018.
- **Impacts:**
 - At sustained warming levels between 2-3 degree Celcius, the Greenland and West **Antarctic ice sheets will be almost completely and irreversibly lost** over multiple millennia causing potentially multimeter sea-level rise.
 - Sea-level rise will bring cascading and compounding impacts resulting in losses of **coastal ecosystems and ecosystem services**, groundwater salinization, flooding and damage to coastal infrastructure that cascade into risks to livelihoods, settlements, health, well-being, food, displacement and water security, and cultural values in the near to long-term.

What is the Scenario for India?

- **Rate of Sea Level Rise:**
 - According to the Ministry of Earth Sciences, on average, the sea level along the Indian coast was observed to be rising at a rate of about **1.7 mm/year during the last century (1900-2000)**.
 - A 3 cm sea level rise could cause **the sea to intrude inland by about 17 meters**. At future rates of 5 cm/decade, this could be 300 metres of land taken by the sea in a century.
- **India is more Susceptible:**
 - India is most **vulnerable to compounding impacts** of sea level rise.

- In the Indian ocean half of sea level rise is **due to the volume of water expanding since the ocean is warming** up rapidly.
- The contribution from glacier melt is not as high.
- The **Indian Ocean is the fastest warming ocean** in terms of surface warming.
- **Implications:**
 - India is facing compound extreme events along our coastline. Cyclones are intensifying rapidly due to **more moisture and heat from ocean warming**.
 - The amount of flooding also increases because storm surges **are compounding sea level rise** decade by decade.
 - Cyclones are bringing more rain than earlier. Super **Cyclone Amphan (2020)** caused large-scale **flooding** and inundated tens of kms inland with saline water intruding.
 - Over time, the Indus, **Ganga** and Brahmaputra rivers may shrink, and rising sea levels combined with a deep intrusion of saltwater **will make large parts of their huge deltas simply uninhabitable**.

What are the Recommendations?

- There is a need to **address the climate crisis and broaden our understanding** of the root causes of insecurity.
- It is imperative to actively support **grassroots resilience efforts to tackle climate change** and improve **Early Warning Systems**.

What is the World Meteorological Organization (WMO)?

- The WMO is an **intergovernmental organization with a membership of 192 Member States and Territories**.
 - India is a member of WMO.
- It originated from the International Meteorological Organization (IMO), which was established after the **1873 Vienna International Meteorological Congress**.
- Established by the ratification of the WMO Convention on **23rd March 1950, WMO became the specialized agency of the United Nations** for meteorology (weather and climate), operational hydrology and related geophysical sciences.
- WMO is headquartered in **Geneva, Switzerland**.

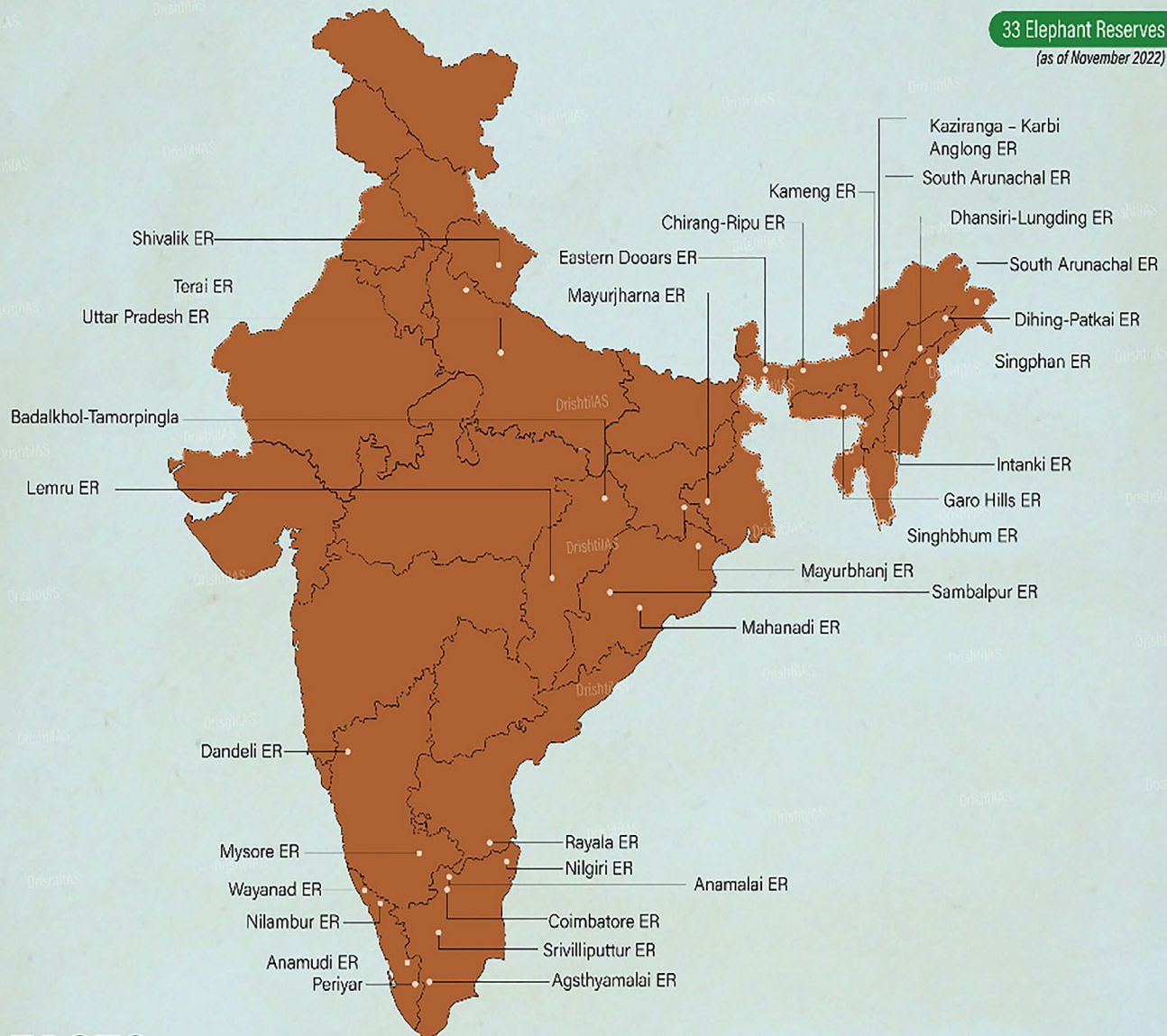
Note:

Elephant Reserves

Elephant Reserves

33 Elephant Reserves

(as of November 2022)



FACTS

- Tamil Nadu and Assam have the highest number (5) of elephant reserves in India.
- The Indian *elephant* *Elephas maximus* is included in Schedule I of the Indian Wildlife (Protection) Act, 1972 and in Appendix I of CITES.
- Indian Elephant has also been listed in the Appendix I of the Convention of the Migratory Species and as 'Endangered' in the IUCN Red List.
- The elephant was declared the National Heritage Animal of India in 2010.
- MoEFCC provides financial and technical support to major elephant range states in the country through Project Elephant. Project Elephant was launched by the Government of India in the year 1992 as a Centrally Sponsored Scheme.



Note:



drishti

Keoladeo National Park

Why in News?

The Rajasthan Government has proposed to construct a zoo inside **Keoladeo National Park**, a **World Heritage Site** popularly known as **Bharatpur bird sanctuary**, to display a range of wetland species.

- The purpose of this zoo, called Wetland ex-situ Conservation Establishment (WESCE), is to display a **range of wetland species**, including **rhinos**, water buffaloes, crocodiles, dolphins and exotic species.

What is the Purpose of WESCE?

- The WESCE aims to rejuvenate the **biodiversity of Keoladeo National Park**, thereby boosting its outstanding universal values.
- The WESCE plan is part of the ambitious **Rajasthan Forestry and Biodiversity Development Project (RFBDP)** for which Agence Française de Développement (AFD), the overseas development arm of the French government, has agreed to **fund up to Rs 12 crore over eight years**.
- Several facilities are **planned inside Keoladeo National Park, including**,
 - A breeding and reintroduction centre for locally extinct species (otters, fishing cats, **blackbucks**, hog deer, etc).
 - An aquarium for indigenous species like **Gangetic Dolphin, crocodiles**; enclosures for the display of large wetland species like Indian Rhino, Water Buffalo, Barasingha (swamp deer); etc.

What are the Key Points of Keoladeo National Park?

- **About:**
 - Keoladeo National Park is a **wetland and bird sanctuary located** in Bharatpur, Rajasthan. It is a **UNESCO World Heritage Site** and one of the most important bird-watching areas in the world.
 - **Chilika Lake** (Orissa) and Keoladeo National Park (Rajasthan) were recognized as the first **Ramsar Sites of India** in 1981.
 - Currently, Keoladeo National Park and **Loktak Lake (Manipur)** are in **Montreux record**.
 - It is known for its **rich avian diversity and abundance of waterbirds**. The park is home to **over 365 species**

of birds, including several rare and threatened species, such as the Siberian crane.

- Different species from far-flung areas of the northern hemisphere visit the Sanctuary for breeding. The Siberian crane is one of the rare species that can be spotted here.
- **Fauna:**
 - Animals such as Jackals, Sambar, Nilgai, wild cats, hyenas, wild boar, porcupine and mongoose can be found in the region.
- **Flora:**
 - The principal vegetation types are tropical dry deciduous forest dominated by *Acacia nilotica* intermixed with dry grassland.
- **River:**
 - **Gambhir and Banganga** are two rivers that flow through this National Park.

What are Protected Areas in Rajasthan?

- **Tiger Reserves:**
 - **Ranthambore Tiger Reserve (RTR)** in Sawai Madhopur
 - **Sariska Tiger Reserve (STR)** in Alwar
 - **Mukundra Hills Tiger Reserve (MHTR)** in Kota
- **National Park:**
 - **Desert National Park**, Jaisalmer
- **Wildlife Sanctuary:**
 - **Sajjargarh wildlife sanctuary**, Udaipur
 - National Chambal Sanctuary (on tri-junction of Rajasthan, Madhya Pradesh and Uttar Pradesh).



Note:

International Marine Protected Areas Congress

Why in News?

Recently, the 5th International Marine Protected Areas Congress (IMPAC5) was held in Canada in order to **discuss the solutions to address the Funding Gap of Marine Protected Areas (MPAs)**.

- This meeting is crucial since nations agreed to protect 30% of Earth's lands and oceans by 2030 at the **15th Conference of the Parties to the Convention on Biological Diversity** held in 2022.

Note:

Canada is bordered by three oceans - the Pacific, Arctic and Atlantic - and has the longest coastline in the world.

What are the Highlights of the Meet?

- **Sustainable and Resilient MPA networks:**
 - As many as **70% of MPAs are underfunded**. A well-managed and sufficiently funded MPA can restore good health to vulnerable ecosystems.
 - Achieving sustainable and resilient MPA networks depends on **an overall commitment to protection, leadership**, engagement from stakeholders, institutions, governments and organizations, Indigenous peoples, coastal communities, and individuals in an **inclusive and equitable manner to advance ocean protection**.
 - IMPAC5 aims to **provide a forum for sharing knowledge, successes and best practices in an open and respectful environment** for the exchanging of ideas among a diversity of views.
- **Significance of MPAs:**
 - MPAs can generate sustainable revenues for their own management.
 - Revenue can be generated from statutory and non-statutory MPA fees for tourism programmes, **blue carbon credits generated from mangrove conservation** and avoided deforestation as well as seaweed farming and sustainable coastal fisheries.

What are Marine Protected Areas?

- **About:**

- MPAs are designated areas of the ocean that are set aside for the protection and conservation of marine ecosystems and their biodiversity.
- Within the region, certain activities are limited, or entirely prohibited, to meet specific conservation, habitat protection, **ecosystem monitoring or fisheries management objectives**.
- MPAs do not necessarily exclude fishing, research or other human activities; in fact, many MPAs are multi-purpose areas.
- **Need for Establishing MPAs:**
 - **Biodiversity Conservation:**
 - MPAs help to conserve the diversity of **marine species and their habitats**, preserving the delicate balance of marine ecosystems and the services they provide, such as food and oxygen production.
 - **Sustainable Fisheries:**
 - MPAs can help to regulate fishing activities and prevent overfishing, ensuring that fish populations are able to recover and remain healthy, which in turn supports sustainable fishing practices.
 - **Climate Change Mitigation:**
 - MPAs can **serve as carbon sinks, helping to absorb and store carbon dioxide** from the atmosphere and mitigate the impacts of climate change on marine ecosystems.
 - **Research and Education:**
 - MPAs can provide valuable **opportunities for scientific research and educational activities**, helping to increase our understanding of the marine environment and promote ocean literacy.
 - **Economic Benefits:**
 - MPAs can contribute to **local economies by attracting tourists**, providing opportunities for sustainable tourism and recreation, and supporting local fishing communities.
- **Treaties, Conventions and Agreements:**
 - **Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area:**
 - It specifically aims to establish a network of 'specially protected areas to conserve cetaceans. It prohibits the deliberate killing of cetaceans in national waters.

Note:

- **Bern Convention:**
 - Formulated under the aegis of the European Community Council in 1979, it has been in force since 1982 and covers European states.
- **CITES:**
 - Formulated under UNEP in 1973, **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** has been in force since 1975 and has worldwide application. CITES regulates international trade of species listed on three appendices.
- **EU Habitats Directive:**
 - Formulated by the European Community Council in 1992, the EU Habitats Directive applies to all EU states, including the Azores and Madeira (part of Portugal) and the Canary Islands.
- **CCAMLR:**
 - **Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)** is a multilateral response to concerns that unregulated increases in krill catches in the Southern Ocean could be detrimental for Antarctic marine ecosystems particularly for seabirds, seals, whales and fish that depend on krill for food.

What are the Marine Protected Areas in India?

- In India, there are **33 national parks and wildlife sanctuaries** designated under the Wildlife (Protection) Act of 1972 that make up the country's MPAs.
- Marine National Park and Marine Sanctuary in the Gulf of Kutch form one unit and **Bhitarkanika National Park** and Bhitarkanika Sanctuary are an integral part of one MPA. Thus, **there a total of 31 MPAs in India.**
- MPAs cover less than 4.01% of the total area of all **Protected Areas of India.**

What is IMPAC?

- IMPAC congresses are a collaborative effort between **the International Union for the Conservation of Nature (IUCN)** and the chosen host country.
- The congress brings together scientists, policy makers, practitioners, and stakeholders from around the world to discuss the latest scientific knowledge, best practices and challenges in the management of MPAs.

- The goal of IMPAC is to advance the conservation and sustainable use of the world's marine biodiversity and to support the implementation of the **United Nations Convention on Biological Diversity's** goals for marine conservation and management.



Green Steel

Why in News?

Ministry of Steel seeks to reduce carbon emissions in steel industry through promotion of **Green Steel.**

What is Green Steel?

- **About:**
 - Green Steel is the **manufacturing of steel without the use of fossil fuels.**
 - This can be done by using **low-carbon energy sources such as hydrogen, coal gasification, or electricity** instead of the traditional carbon-intensive manufacturing route of coal-fired plants.
 - It eventually **lowers greenhouse gas emissions, cuts cost and improves the quality of steel.**
 - **Low-carbon hydrogen (blue hydrogen and green hydrogen)** can help **reduce the steel industry's carbon footprint.**
- **Ways of Production:**
 - **Substituting the Primary Production Processes with Cleaner Alternatives:**
 - **Carbon capture, utilization and storage (CCUS).**
 - Replacing conventional sources of energy with low-carbon hydrogen.

Note:

- Direct electrification through electrolysis of iron ore.

➤ **Significance:**

- The steel industry is the largest industrial sector in terms of intensive energy and resource use. It is **one of the biggest emitters of carbon dioxide (CO₂)**.
- In view of commitments made at the **Conference of the Parties (COP26)** climate change conference, the Indian steel industry **needs to reduce its emissions substantially by 2030 and hit net-zero carbon emissions by 2070**.

What is the Status of Steel Production in India?

- **Production:** India is currently the **world's 2nd largest producer of crude steel**, producing 120 Million Tonnes (MT) crude steel during financial year 2021- 2022.
- **Reserves: More than 80% of the country's reserves** are in the states of Odisha, Jharkhand, West Bengal, Chhattisgarh and the northern regions of Andhra Pradesh.
 - **Important steel-producing centers** are Bhilai (Chhattisgarh), Durgapur (West Bengal), Burnpur (West Bengal), Jamshedpur (Jharkhand), Rourkela (Odisha), Bokaro (Jharkhand).
- **Consumption:** India is the **2nd largest consumer of finished steel** in 2021 (106.23 MT), preceded by China as the largest steel consumer as per World Steel Association.

What are the Related Government Initiatives?

➤ **Steel Scrap Recycling Policy, 2019:**

- **Steel Scrap Recycling Policy, 2019** enhances the availability of domestically generated scrap to reduce the consumption of coal in steel making.

➤ **National Green Hydrogen Mission:**

- Ministry of New and Renewable Energy (MNRE) has announced **National Green Hydrogen Mission** for green hydrogen production and usage. The steel sector has also been made a stakeholder in the Mission.

➤ **Motor Vehicles (Registration and Functions of Vehicles Scrapping Facility) Rules September 2021:**

- It shall increase availability of scrap in the steel sector.

➤ **National Solar Mission:**

- Launched by MNRE in January 2010, it promotes the use of solar energy and also helps reduce the emission of steel industry.

➤ **Perform, Achieve and Trade (PAT) Scheme:**

- **PAT Scheme** incentivizes steel industry to reduce energy consumption.

➤ **NEDO Model Projects:**

- **Japan's New Energy and Industrial Technology Development Organization (NEDO) Model Projects** have been implemented in steel plants for Energy Efficiency Improvement.



Note:



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History

Highlights

- Sarojini Naidu (*The Nightingale of India*)

Sarojini Naidu (The Nightingale of India)

Why in News?

13th February marks the **birth anniversary of Sarojini Naidu**. She was famously known as **Bharatiya Kokila (The Nightingale of India)**.

- India celebrates Sarojini Naidu's birth anniversary as **National Women's Day**.

Who was Sarojini Naidu?

➤ About:

- Sarojini Naidu, was an **Indian independence activist, poet, and politician**.
 - She was born on **February 13, 1879, in Hyderabad, India**.
- She joined the **Indian national movement** in the wake of **partition of Bengal in 1905**.
- The British government lauded Sarojini Naidu with the '**Kaisar-i-Hind' Medal** for her service during the plague epidemic in India.

➤ Contribution to Indian Freedom Movement:

- **First Indian Woman President of INC:** Naidu was elected as the **first Indian woman president of the Indian National Congress (INC) in 1925 (Kanpur Session)** and continued to hold this position till **1928**.
 - **Annie Besant** was the **first woman President of the INC** who presided it in 1917.
- **Participated in Non-Cooperation Movement:** Naidu took part in the **Non-Cooperation Movement** launched by Gandhi in 1920 and **was arrested several times** for her involvement in various freedom activities.
- **Lead Salt Satyagraha:** In 1930, Naidu was selected by Gandhi to lead the **Salt Satyagraha**, a **nonviolent**

protest against the British monopoly on salt production in India.

- On May 21, Sarojini Naidu led 2,500 marchers on the Dharasana Salt Works, some 150 miles north of Bombay.
- **Quit India Movement:** In 1942, Sarojini Naidu was arrested during the "**Quit India**" movement and was jailed for 21 months with Gandhiji.
- **Traveled Abroad to Raise Awareness:** Naidu traveled to different countries, including the **United States and the United Kingdom**, to raise awareness about India's struggle for independence and **to mobilize international support**.
 - She also **represented India at various international forums** and spoke about the Indian independence movement and **women's rights**.
- **Contribution as a Politician:**
 - **Second Round Table Conference:** She accompanied Gandhiji to London for the inconclusive **second session of the Round Table Conference** for **Indian-British cooperation (1931)**.
 - **Governor of Uttar Pradesh:** After India gained independence, **Naidu was appointed as the governor of Uttar Pradesh**, becoming the **first woman to hold a governor's office in India**.
- **Other Contributions:**
 - **A Renowned Poetess:** Naidu was a renowned poetess and wrote in both English and Urdu.
 - Published in 1912, '**In the Bazaars of Hyderabad**' remains one of her **most popular poems**.
 - Her other works include "**The Golden Threshold (1905)**", "**The Bird of Time (1912)**", and "**The Broken Wing (1912)**".
 - **Worked for Women's Empowerment:** Naidu was a strong advocate of women's rights and worked tirelessly to empower women in India.

Note:

- She was also a member of the **All-India Women's Conference** and worked to improve the status of women in India.

➤ **Death:**

- She died on **March 2, 1949, in Lucknow, India.**

➤ **Relevance of Sarojini Naidu in Present Times:**

- Sarojini Naidu was a **multifaceted personality and remains a role model for women in India and around the world.** Her **courage, dedication, and leadership inspired millions of Indians** and continue to inspire generations to come.

SAROJINI NAIDU

(February 13, 1879 - March 2, 1949)



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BRIEF PROFILE

- A **Political activist, Feminist, Poet**
- Known as **Bharatiya Kokila (The Nightingale of India)**

*Her birth anniversary is observed as **National Women's Day** (13th February)*

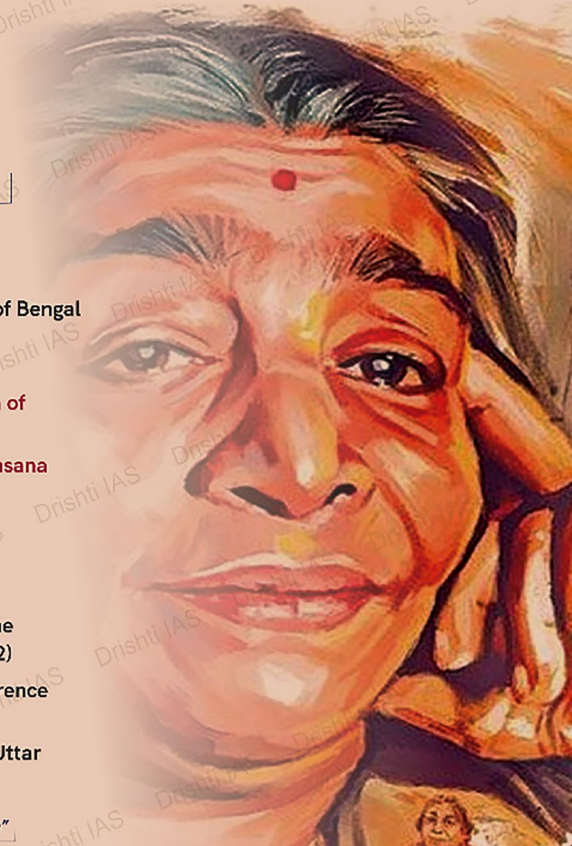
CONTRIBUTION TO INDIAN FREEDOM MOVEMENT

- Joined the **Indian National Movement** in 1905 during the **Partition of Bengal**
- **First Indian Woman President** of Indian National Congress in 1925 (preceded by the English feminist Annie Besant in 1917)
- Accompanied Gandhi to London for the inconclusive **second session of the Round Table Conference** for Indian-British cooperation (1931)
- A significant leader of **Salt Satyagraha Movement** (1930); Led **Dharasana Satyagraha**
- Represented India at Various International Forums

OTHER CONTRIBUTION

- A **Renowned Poetess**: The Golden Threshold (1905), The Bird of Time (1912), The Broken Wing (1912), In the Bazaars of Hyderabad (1912)
- **Advocated Women Rights**: Member of the All India Women's Conference (founded in 1927)
- **India's First Woman Governor**: She was appointed the governor of Uttar Pradesh after India achieved independence in 1947

"We want deeper sincerity of motive, a greater courage in speech and earnestness in action"



Note:

Geography

Highlights

- Earthquakes in Turkey and Causes
- India's Earthquake Preparedness
- GSI Discovers Lithium Resources in J&K
- Groundwater Loss for the Indian Ganga Basin
- Atmosphere and Its Layers

Earthquakes in Turkey and Causes

Why in News?

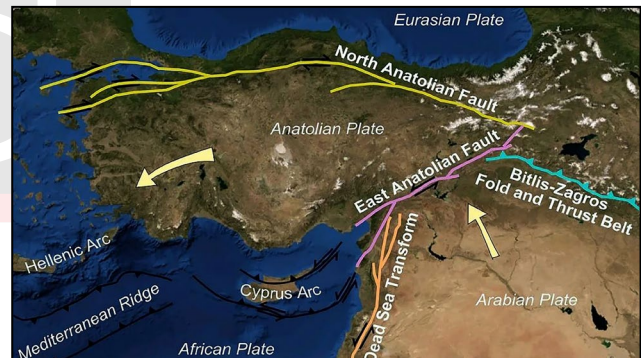
Recently, powerful tremors were felt in Turkey after an **earthquake of magnitude 7.8 struck along a well-known fault line called the Anatolia tectonic block.**

- The earthquakes emerged from relatively shallow depths and **were a "strike-slip quake"**.
- It is being described as the strongest Earthquake that Turkey has experienced in over a century and the worst disaster since 1939. The **1939 earthquake was the Erzincan Earthquake** that had caused "extreme damage in the Erzincan Plain and the Kelkit River Valley.

What Makes Turkey Prone to Earthquakes?

- In the Eastern Mediterranean region comprising **Turkey, Syria and Jordan**, tectonics are dominated by **complex interactions between the African, Arabian, and Eurasian tectonic plates**, and the **Anatolian tectonic block**.
- Turkey sits on the Anatolian tectonic plate, which borders two major faults, the **North Anatolian Fault (NAF)** that cuts across the country from west to east, and the East Anatolian Fault (EAF) in the southeast.
 - The NAF line is the meeting point of the **Eurasian and Anatolian tectonic plates** that is known to be "Particularly Devastating".
 - NAF is **right-lateral strike-slip structure** in northern Turkey accommodating much of the translational motion of the Anatolia block westwards with respect to Eurasia and Africa.
 - The EAF is the **tectonic boundary between the Anatolian Plate and the northward-moving Arabian Plate**. It runs 650 kilometers from eastern Turkey and into the Mediterranean.

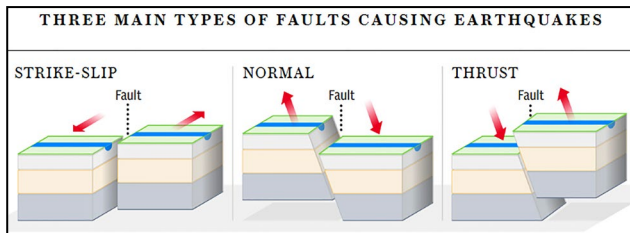
- In addition to this, the **Aegean Sea Plate**, located in the eastern Mediterranean Sea under southern Greece and western Turkey, is **also a source of seismic activity in the region.**
- According to one estimate, almost **95% of Turkey's land mass is prone to earthquakes**, while about a third of the country is at high risk, including the areas around the major cities of **Istanbul and Izmir and the region of East Anatolia.**



How is Regular Earthquake is Different from Strike Slip Earthquake?

- **Plate Movement:** In a strike-slip earthquake, two tectonic plates **move horizontally past each other**, whereas in a regular earthquake, the movement is vertical.
 - Fault Zones, Tectonic Earthquakes, Volcanic Earthquake, Human Induced Earthquakes are the different **types of Earthquakes.**
- **Fault Type and Location:** Strike-slip earthquakes occur along transform boundaries such as the San Andreas Fault in California while regular earthquakes **occur along divergent or convergent plate boundaries** where the plates move vertically such as along the **Pacific "Ring of Fire."**
- **Causes:** The cause of strike-slip fault earthquakes is due to the movement of the two plates against one another and the release of **built-up strain.**

Note:



Do Shallow Earthquake Cause Greater Damage?

- A shallow earthquake is an earthquake that **occurs at a shallow depth, usually within the Earth's crust, near the surface. They typically have a depth of less than 70 km and can result in strong ground shaking and surface faulting.**
- They are **often more damaging than deep earthquakes** because the energy from the seismic waves is released **closer to the surface, leading to stronger ground motion** and more intense shaking.
 - This can cause damage to buildings and infrastructure, as well as triggers landslides, rockfalls, and other secondary hazards.
- However, the amount of damage caused by an earthquake **depends on a number of factors, including the magnitude of the earthquake, the distance from the epicenter, the depth of the earthquake, the type of soil and geological conditions at the surface.**

India's Earthquake Preparedness

Why in News?

A severe **earthquake** followed by an almost **equal magnitude aftershock** hit **southeastern Turkey and Syria** on February 6, 2023, causing widespread destruction and loss of life.

- The **Turkey-Syria earthquake** should motivate a review of **India's earthquake preparedness, as poor enforcement of zoning and construction rules** is prevalent in the country.

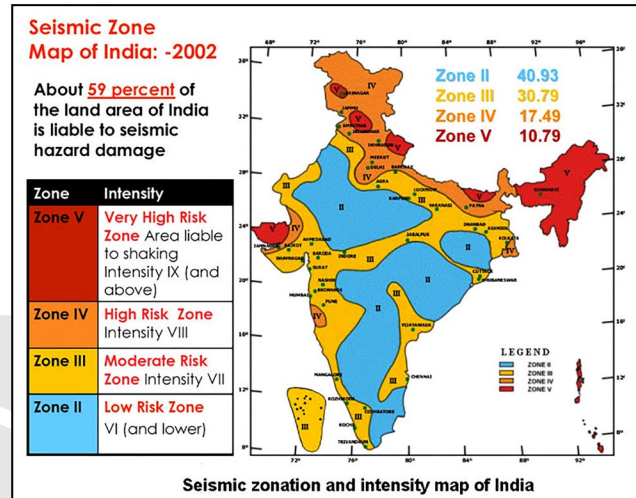
What Makes India Susceptible to Earthquakes?

- **About:**
 - India's terrain is **prone to great earthquakes, particularly in the Himalayan plate boundary, which**

has the potential for large quakes (**magnitude 7 and above**).

- In India, earthquakes are primarily caused by the collision of the **Indian Plate with the Eurasian Plate.**
 - This collision has resulted in the formation of the **Himalayas**, as well as frequent earthquakes in the region.

➤ Seismic Zones:



➤ Susceptibility of Major Earthquakes:

- Scientists are aware of identifiable **seismic gaps** along the Himalayan axis where the historical **release of geological tension** doesn't fully account for the strain that has built up.
 - For instance, the **Central Himalaya** has been **historically deficient in earthquakes** compared to other areas. So, it's **one region that can reasonably be expected to generate a large earthquake** in the future.

Note:

Seismic Gap is the part of an active fault that has experienced little or no seismic activity for a long period, indicating the buildup of stresses that are useful in predicting earthquakes.

➤ Earthquakes In/Around India:

- India has experienced several significant earthquakes over the years, here are some examples:

No.	Place	#of Deaths	Date, time, and year	Magnitude	Epicenter
1.	Indian Ocean	> 283,106	08:50 December 26th, 2004	9.1-9.3	West coast of Sumatra, Indonesia

Note:

2.	Kashmir	130,000	08:38 October 8th, 2005	7.6	Muzaffarabad Pakistan Administered Kashmir
3.	Bihar and Nepal	> 30,000	14:13 January 15th, 1934	8.7	South of Mount Everest
4.	Gujarat	20,000	08:50 January 26th, 2001	7.7	Kutch, gujarat
5.	Kangra	> 20,000	06:10 April 4th, 1905	7.8	Himalayas

- **Nepal Earthquake 2015:** On April 25, 2015, a **magnitude 7.8 earthquake** struck Nepal. The earthquake also had a significant impact in northern India.
- **Imphal Earthquake 2016:** On January 4, 2016, a **magnitude 6.7 earthquake** struck the **northeastern Indian state of Manipur**, causing widespread damage.
- **Uttarakhand Earthquake 2017:** On February 6, 2017, a **magnitude 6.7 earthquake** struck the northern Indian state of Uttarakhand.

What Steps can be Taken for Earthquake Preparedness in India?

- **Building Codes and Standards:** India has established **building codes and standards for earthquake-resistant construction**.
 - It is important to **strictly enforce these codes and standards to ensure that new buildings are built to withstand earthquakes**. This will also require regular inspections and enforcement of existing building codes.
- **Retrofitting and Reinforcement:** Older buildings may not meet current earthquake-resistant standards, and many of them **can be retrofitted or reinforced to improve their seismic performance**.
- **Emergency Response Planning:** Planning for emergency response is critical for minimising the impact of earthquakes. This includes **developing evacuation plans, establishing emergency shelters**, and training personnel on how to respond to earthquakes.
- **Research and Monitoring:** Investing in research and monitoring can help improve **our understanding of earthquakes and their causes**, and can also help to develop better methods for predicting and mitigating their impact.

- **Land-Use Planning:** It is important to consider the potential impacts of earthquakes when planning and developing land-use policies. This includes **limiting development in areas that are prone to earthquakes** and ensuring that new development is designed and constructed in a way that minimises the risk of damage.

GSI Discovers Lithium Resources in J&K

Why in News?

The **Geological Survey of India** has for the first-time established **Lithium 'inferred' resources(G3)** of 5.9 million tonnes in **Salal-Haimana area of the UT of Jammu & Kashmir**.

What are Inferred Resources?

- The "inferred" mineral resource is a resource for which **quantity, grade and mineral content are estimated only with a low level of confidence**.
- It is based on information gathered from locations such as outcrops, trenches, pits, workings and drill holes that may be of **limited or uncertain quality**, and also of lower reliability from geological evidence.
- It is based on the classification from **United Nations International Framework Classification for Reserves/ Resources – Solid Fuels and Mineral Commodities of 1997 (UNFC-1997)**.

What is UNFC-1997?

- **UNFC-1997** is a system for the classification and reporting of reserves and resources of solid fuels and mineral commodities and provides a standardized, internationally recognized system for the reporting of reserves and resources.
 - It has been developed by the **UN Economic Commission for Europe**.
- It **promotes transparency and consistency in the reporting** of mineral and energy assets and ensures that geological, engineering, and economic information is used consistently.
 - It provides a **basis for comparing reserves and resources data** between countries and regions which is widely used by governments, industry, and financial institutions around the world.

Note:



- According to UNFC-1997, there are four stages of exploration for any mineral deposit:
 - **Reconnaissance (G4)**
 - **Preliminary exploration (G3)**
 - **General Exploration (G2)**
 - **Detailed Exploration (G1)**

What is Lithium?

- **About:**
 - Lithium (Li), sometimes also referred as **'White gold'** due to its high demand for rechargeable batteries, is a soft and silvery-white metal.
- **Extraction:**
 - Lithium can be extracted in different ways, depending on the type of the deposit — generally either through **solar evaporation of large brine pools**, or from **hard-rock extraction of the ore**.
- **Uses:**
 - Lithium is an important component of **electrochemical cells** used in batteries of EVs, Laptops, Mobiles etc.
 - It is also used in **thermonuclear reactions**.
 - **It is used to make alloys** with aluminium and magnesium, improving their strength and making them lighter.
 - **Magnesium-lithium alloy** - for **armour plating**.
 - **Aluminum-lithium alloys** - in **aircraft, bicycle frames and high-speed trains**.
- **Major Global Lithium Reserves:**
 - Chile > Australia > Argentina are top countries with Li reserves.
 - **Lithium Triangle: Chile, Argentina, Bolivia**.
- **Lithium Reserves in India:**
 - Preliminary survey showed estimated lithium reserves of 14,100 tonnes in a small patch of land surveyed in **Southern Karnataka's Mandya district**.
 - Other **potential sites:**
 - Mica belts in **Rajasthan, Bihar, Andhra Pradesh**.
 - Pegmatite belts in **Odisha and Chhattisgarh**.
 - **Rann of Kutch** in Gujarat.

How India Currently

Fulfills its Lithium Demand?

- India is currently **dependent on imports for lithium cells** and batteries. **Over 165 crore lithium batteries** are estimated to have been **imported into India between FY17 and FY20** at an estimated import bill of upwards of \$3.3 billion.
- The country's efforts to secure lithium sourcing agreements are seen as a move against imports from China, which is the major source of both raw materials and cells.
- India is perceived as a **late entrant into the lithium value chain**, entering at a time when the EV sector is expected to undergo significant disruption.
- **2023 is considered a turning point for battery technology**, with the potential for several improvements to the Li-ion technology.

What is the Significance of Discovery?

- **Assistance in Achieving Targets:**
 - India has pledged to reduce its emissions towards **net zero by 2070**, which requires the availability of lithium as a critical component in electric vehicle (EV) batteries.
 - The **Central Electricity Authority of India** has **estimated that the country will need 27 GW of grid-scale battery energy storage systems by 2030**, which will require massive amounts of lithium.
- **Addressing Global Shortages:**
 - The **World Economic Forum (WEF)** has **warned of global lithium shortages** due to rising demand for EVs and rechargeable batteries, which is estimated to reach 2 billion by 2050.
 - The world's supply of lithium is under strain due to the **concentration of resources in a few locations** with 54% of the world's Lithium reserves are found in **Argentina, Bolivia and Chile**.
 - The **International Energy Agency (IEA)** predicts that the world could face **lithium shortages by 2025**.

What is Geological Survey of India?

- Presently, GSI is an attached office to the **Ministry of Mines**. It was **set up in 1851** primarily to find coal deposits for the Railways.

Note:

- Over the years, it has grown into a **repository of geo-science information** and also has attained the **status of a geo-scientific organization** of international repute.
- It is headquartered in **Kolkata** and has **six regional offices** located at Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata. Every state has a state unit.
- **Central Geological Programming Board (CGPB)** is an important platform of the Geological Survey of India (GSI) to facilitate discussion for synergy and to avoid duplication of work.

Groundwater Loss for the Indian Ganga Basin

Why in News?

A recent report, "Estimation of groundwater storage loss for the Indian Ganga Basin using multiple lines of evidence," estimates that **groundwater storage levels in the Ganga basin have been declining by 2.6 centimeters per year.**

- The Ganga Basin's aquifers are one of the largest reservoirs of groundwater in the world.

What are the Findings?

- The average groundwater levels have been declining at a rate of **2.6 cm year⁻¹ between 1996-2017.**
- The analysis of satellite data from the Gravity Recovery and Climate Experiment (GRACE), yielded **an average loss of 1.7 cm per year⁻¹.**
 - GRACE satellites, launched in 2002, assess Earth's water reservoirs over land, ice and ocean.
- The average storage decline in Uttar Pradesh, Bihar and West Bengal was estimated to be roughly 2 cm year⁻¹, 1 cm year⁻¹ and 0.6 cm year⁻¹, respectively.
- The impacts were more pronounced in **Rajasthan, Haryana and Delhi**, with average storage declines of roughly 14 cm year⁻¹, 7.5 cm year⁻¹ and 7.2 cm year⁻¹, respectively.
- West and southwest areas, including agriculturally intensive regions and urban areas like Delhi and Agra, **took the biggest hit.**
- Delhi and Haryana have high groundwater abstraction rates, which explains the steep decline.
- The **Brahmaputra basin** shows **more groundwater level reduction than the Ganga and Indus basins.**

What is the Ganga River System?

- It is the longest river of India flowing over 2,510 km of mountains, valleys and plains and is revered by Hindus as the most sacred river on earth.



- The Ganga basin outspreads in **India, Tibet (China), Nepal and Bangladesh** over an area of 10,86,000 Sq.km.
- In India, it covers states of **Uttar Pradesh, Madhya Pradesh, Rajasthan, Bihar, West Bengal, Uttarakhand, Jharkhand, Haryana, Chhattisgarh, Himachal Pradesh and Union Territory of Delhi** draining nearly 26% of the total geographical area of the country.
- It originates in the snowfields of the **Gangotri Glacier in the Himalayas.**
- At its source, the river is called as the Bhagirathi. It descends down the valley upto **Devprayag** where after joining another hill stream Alaknanda, it is called **Ganga.**
- The **principal tributaries** joining the river from **right** are the **Yamuna and the Son.**
- The **Ramganga, the Ghaghra, the Gandak, the Kosi and the Mahananda** join the **river from left.** The Chambal and the Betwa are the two other important sub-tributaries.
- The **Ganges River Dolphin** is an endangered animal that specifically habitats this river.
- The Ganga joins the Brahmaputra (Jamuna) in Bangladesh and continues its run under the name Padma.
- **The Ganga widens out into the Ganges Delta in the Sundarbans** swamp of Bangladesh, before it ends its journey by emptying into the Bay of Bengal.

Note:

Atmosphere and Its Layers



ATMOSPHERE AND ITS LAYERS

ATMOSPHERE

- One of the main components of Earth's interdependent physical system
- It is composed of about 78% nitrogen, 21% oxygen, and 1% other gases

LAYERS

Troposphere:

- Extends from Earth's surface upto 12 kilometers
- The lowest part of the atmosphere- the part we live in
- Temperature in the troposphere decreases with height
- The top of the troposphere is called tropopause

Densest atmospheric layer

- Contains about 75% of all of the air in the atmosphere, and 99% of water vapour (which forms clouds and rain)

Stratosphere:

- Located between 12 and 50 kilometers above Earth's surface
- Contains much of the ozone in the atmosphere
 - Ozone molecules in this layer absorb ultraviolet (UV) radiation from the Sun, resulting in an increase in temperature
- It is nearly cloud- and weather-free
- It's the highest part of the atmosphere that jet planes can reach

Mesosphere:

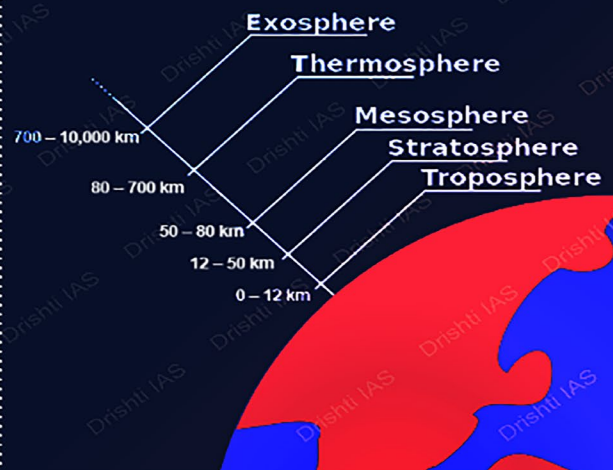
- Located between about 50 and 80 kilometers above Earth's surface
- The top of this layer is the coldest place found within the Earth system
- It forms noctilucent clouds, the highest clouds in Earth's atmosphere
- Most meteors burn up in this atmospheric layer
- Sounding rockets and rocket-powered aircraft can reach the mesosphere

Thermosphere:

- Located between about 80 and 700 kilometers above Earth's surface
- Its lowest part contains the ionosphere
- The temperature of the thermosphere varies between night and day and between the seasons
- The aurora borealis (northern) and aurora australis (southern) are sometimes seen here

Exosphere:

- Located between 700 and 10,000 kilometers above Earth's surface.
- The highest layer of Earth's atmosphere.
- There's no weather at all in this layer.
- Most Earth satellites orbit in this layer.
- At the bottom of the exosphere is a transition layer called the thermopause.



Note:

Art and Culture

Highlights

- Tourism Working Group in Rann of Kutch
- Visva-Bharati to be World's First Living Heritage University

Tourism Working Group in Rann of Kutch

Why in News?

As part of **India's G20 presidency**, Gujarat will host the first **Tourism Working Group (TWG)** meeting in the state's **Rann of Kutch** from **7 to 9 February 2023**.

- **Rural and Archaeological tourism** will be the focus area of Tourism. Also, **Dholavira, which is a UNESCO World heritage site**, will be the second spot for foreign delegates.

How is the G20 Emphasizing Interventions in the Tourism Sector?

- In the **G20 Presidency of India**, there are **5 interrelated priority areas for tourism**. Accordingly, thrust will be on these five priority areas:
 - **Greening of the Tourism sector**
 - Harnessing the power of **digitisation**
 - Empowering youth with skills
 - **Nurturing tourism MSMEs/ startups**
 - Rethinking the strategic management of destinations.
- Also, one of the priorities through the **G20 platform** is to reach a consensus on how the **Sustainable Development Goals (SDG) will be achieved by 2030**.
 - As a part of this, there will be **emphasis on sustainable tourism which is important not only for the environment but also to create opportunities for local enterprise**.
- The **different places chosen for the G20 events** will encompass different flavors like **rural tourism (Ladpura Khas village, MP), archaeological tourism (Dholavira), and ecotourism (Khonoma Village, Nagaland) etc.**
 - **Along with this, 3 mega tourism related events** are being organized to take advantage of the G20

Presidency. These include **Global Investors' Summit in April 2023, MICE Convention and Meeting of World Tourism CEOs Forum**.

What is the Status of the Tourism Sector in India?

➤ About:

- India is known for its **diverse cultural heritage, rich history, and natural beauty**, which attract millions of domestic and international tourists each year.
- India offers a wide range of tourism options, including eco-tourism, cruise trips, business travel, sports tourism, educational tourism, **rural tourism, archaeology tourism** and medical tourism.

➤ Contribution to Economy:

- In 2021, India was ranked **6th by the World Travel and Tourism Council** in terms of the **total contribution of Travel & Tourism to the country's GDP**.
- The sector contributed **5.8% to India's GDP in 2021 and created 32.1 million jobs**, which is equivalent to 6.9% of total employment in the country.

➤ Challenges Related to the Tourism Sector:

- **Infrastructural Constraints:** India faces a shortage of **quality tourist infrastructure**, including accommodations, transportation, and recreational facilities, which limits its potential to attract more tourists.
- **Safety and Security:** India has been faced with **concerns regarding the safety and security of tourists**, especially for **women**. This can deter potential tourists from visiting the country.
- **Lack of Standardization:** India faces a **lack of standardization across the tourism industry**, including accommodations, tour operators, and transport providers, which can negatively impact the overall tourist experience.

Note:



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- **Government Initiatives Related to Tourism Development:**
 - **Swadesh Darshan Scheme**
 - **Draft National Tourism Policy 2022**
 - **Dekho Apna Desh Initiative**
 - **National Green Tourism Mission**

Visva-Bharati to be World's First Living Heritage University

Why in News?

Visva-Bharati University, founded by **Rabindranath Tagore** in 1921, is set to become the **world's first "living heritage university"**. The university is expected to receive the **heritage tag** from **UNESCO** in **April or May 2023**.

- Normally **heritage tag is given to a dead monument**. For the first time in the world, a **living university which is functioning** is going to get the heritage tag from **UNESCO**.

What are the Key Points

Related to Visva-Bharati University?

- It is located in Shantiniketan, West Bengal, India. When founded in **1921**, it was named after **Nobel Laureate Rabindranath Tagore** until **Visva-Bharati Society** was registered as an organization in May 1922.
 - Rabindranath believed in **open-air education and introduced that system at the university**, which prevails to date.
- According to **UNESCO**, in 1922, **Visva-Bharati** was inaugurated as a **Centre for Culture with exploration**

into the arts, language, humanities, music and these are reflected in diverse institutes that continue in their educational programmes like including Hindi studies, Sino-Asian studies, humanities, fine arts, and music.

- They are based on the founding principles of **excellence in culture and culture studies**.
- Until Independence, it was a college and the institution was given the status of **Central University in 1951 through a Central Act**.
- The **structures within the institutes** of Visva-Bharati University are diverse in architectural expression.
 - **Examples** include the
 - **Kalo Bari** (a mud structure with coal tar finish and sculpture panels)
 - **Mastermoshai studio** (a single-story structure built for the first principal of Kala Bhavan, Nandalal Bose)
 - **Murals and paintings on Cheena and Hindi Bhavan**

What is UNESCO?

- **UNESCO (United Nations Educational, Scientific and Cultural Organization)** is a specialised agency of the **United Nations** that promotes cooperation among nations through education, science, culture, and communication.
- **Major Initiatives of UNESCO:**
 - **Man and Biosphere Programme**
 - **World Heritage Programme**
 - **Global Geopark Network**
 - **Network of Creative Cities**



Note:

Security

Highlights

- Ramping Up Border Infrastructure
- Surveillance Balloon
- Quick Reaction Surface to Air Missile System

Ramping Up Border Infrastructure

Why in News?

Recently, the Minister of External Affairs provided a briefing to the parliament regarding the government's projects on border infrastructure and connectivity.

- The report was released in the wake of an official Security Conference report that said **Indian forces have lost access to 26 of 65 patrolling points along the LAC since 2020.**

What are the Border Infrastructure Developments?

- **Multi-Pronged Approach:**
 - Improving connectivity to the **Line of Actual Control (LAC)** through roads, bridges and tunnels.
 - For instance, the length of roads constructed in the China border areas in the period from 2014 to 2022 (6,806 km) is almost double the length constructed from 2008-2014 (3,610 km).
 - Improving cross-border connectivity to neighbouring countries via highways, bridges, inland waterways, railroads, electricity lines and fuel pipelines.
 - Modernising and constructing **Integrated Check Posts (ICPs)** at all the border crossings to smooth trade, and funding and constructing infrastructure projects in neighbouring countries.
- **Neighbourhood Projects:**
 - **Nepal:**
 - **South Asia's first cross-border petroleum products pipeline Motihari - Amlekhgunj Pipeline .**

- The **Mahakali motorable bridge** over the Mahakali River connecting Dharchula (India) with Darchula (Nepal), under Indian grant assistance.
- **Bangladesh:**
 - **Maitri Setu**, High Speed Diesel pipeline with Bangladesh that will reduce petrol prices and road congestion.
- **Myanmar:**
 - **Sittwe port project, Kaladan Multi-Modal Transit Transport Project (KMTTP).**
- **Bhutan:**
 - **Dry port in Pasakha bordering West Bengal** is being developed under an Indian government grant.

What is the Importance of Border Infrastructure?

- India faces **long-standing territorial and boundary disputes with China and Pakistan** and porous borders along difficult terrain.
 - For instance, successive **skirmishes with the Chinese People's Liberation Army in Chumar in 2014, Doklam in 2017.**
 - The **ongoing standoff along the entire LAC since April 2020** when the Chinese army amassed troops along the border, which resulted in the **Galwan clashes.**
- Despite border wars and conflicts, the state of infrastructure at India's borders is inadequate and borders are **manned by different military, paramilitary, and police forces, lacking in coordination.**
- **Smugglers, drug traffickers, and terrorists** often take advantage of poor surveillance and infrastructure at borders.

Note:

What are the Other Initiatives to Secure Borders?

- **Vibrant Villages Programme:**
 - **Border villages with sparse population, limited connectivity and infrastructure** will be covered under the new Vibrant Villages Programme, announced in the **Budget 2022-23**.
 - The activities will include **construction of village infrastructure, housing, tourist centers, road connectivity, provisioning of decentralized renewable energy**, direct to home access for Doordarshan and educational channels, and support for livelihood generation.
 - The move has been taken **to counter the Chinese 'model villages' close to the LAC**.
- **The Border Area Development Programme (BADP):**
 - BADP was initiated in the border areas of the western region during the **Seventh Five Year Plan (1985-90)**, for **ensuring balanced development of border areas** through development of **infrastructure and promotion of a sense of security** among the border population.
 - The programme aims to meet the special development needs of the people living in remote and inaccessible areas situated near the international border.
- **Smart Fencing in India (CIBMS):**
 - Two pilot projects covering about **71 Kms on Indo-Pakistan Border (10 Kms) and Indo-Bangladesh Border (61 Kms)** of Comprehensive Integrated Border Management System (CIBMS) have been **completed**.
 - **CIBMS** involves **the deployment of advanced surveillance technologies** such as thermal imagers, infra-red and laser alarms, aerostats, ground sensors, radars, sonar systems, fiber-optic sensors and a real-time command-and-control system to secure borders.
 - **BOLD-QIT** (Border Electronically Dominated QRT Interception Technique) under CIBMS on the Indo- Bangladesh border in Dhubri district of Assam is also being used.
- **Border Road Organization:**
 - **Founded in 1960**, the organisation plays a **major role in providing defence infrastructure** including roads, bridges, highways, airports, tunnels, buildings and other such structures.

A Gist of Border Infrastructure Development

	Main Threat	What needs to be done?	What has been done?
Pakistan	War, insurgency, smuggling.	C.I.B.M.S. monitoring with a well-trained and larger BOLD-QIT, more than one route connecting far flung areas, especially Jammu and Kashmir	C.I.B.M.S. in some stretches, 3rd route to Leh to be opened by 2023.
China	War	Armoured vehicle capable infrastructure, high altitude airfields.	Daulet Beg Oldie airfield running, some bridges and tunnels armoured vehicle capable.
Bangladesh	Smuggling, human trafficking	C.I.B.M.S. monitoring with BOLD-QIT throughout including riverine stretches	Brahmaputra river covered, rivulets still remaining.
Nepal	Smuggling, human trafficking	C.I.B.M.S. monitoring with BOLD-QIT	Planning stage.
Bhutan	Smuggling	Armoured vehicle capable road connectivity till Bhutan-China border.	B.R.O. working on it.

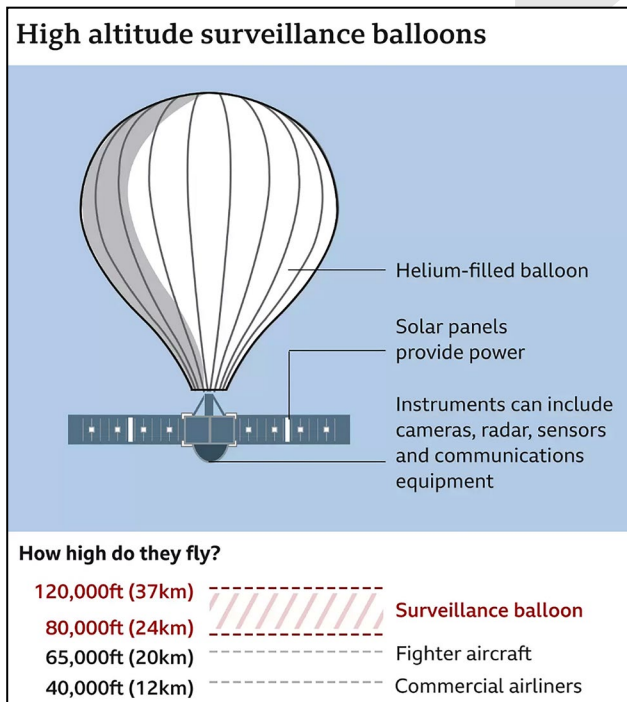
Note:

Myanmar	Smuggling, insurgency, trafficking.	C.I.B.M.S. monitoring with bigger and more efficient BOLD-QIT to tackle insurgency, roads for swift troop movements	Some roads present. C.I.B.M.S. planning stage.
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Surveillance Balloon

Why in News?

The United States (US) shot down a Chinese surveillance balloon that has been spotted over US airspace for a couple of days.



What is a Surveillance Balloon?

- **About:**
 - These cheap, quiet and hard-to-reach balloons have been used for reconnaissance purposes, including in conflicts like the American Civil War.

- The practice became widespread during **World War I** and was used extensively during the **Cold War** when the US launched hundreds of balloons to gather intelligence on the Soviet Union and China.
 - While their use has declined with the rise of unmanned **drones and satellites**, many countries still employ spy balloons.

➤ The Purpose of Sending the Balloon:

- China has for decades complained about US surveillance by ships and spy planes near its own territory, leading to occasional confrontations over the years. **According to China, the balloon was for research but got off track.**

Why do Governments

use Surveillance Balloons?

- **Close-range Monitoring:** In the age of satellites, surveillance balloons which are typically advanced balloons equipped with high-tech, downward-pointing imaging gear offer close-range monitoring.
- **Image Quality:** The lower-flying balloons, which hover at about the same height as commercial airlines fly, can typically take clearer images than the lowest orbiting satellites.
 - Satellites that rotate in sync with Earth capture continuous but hazier images due to farther orbit.
- **Intercepting Communication:** Surveillance balloons can also be capable of “gathering electronic signals” and intercepting communications.

What are the Other

Ways of Surveillance Techniques?

- **Electronic Surveillance:** It can be used in intercepting communication signals, tapping phone calls, and monitoring emails and other forms of digital communication.
- **Human Intelligence (HUMINT):** It is one of the main components used in surveillance by recruiting individuals with access to sensitive information, such as embassy staff, military personnel, or government officials.
- **Cyber Espionage:** It is a form of cyber-attack that steals classified, sensitive data or intellectual property to gain an advantage over a competitive company or government entity.
- **Satellite Imagery:** Satellites are sometimes used to gather information about foreign countries.

Note:

- **Drone Technology:** Drones, also known as **unmanned aerial vehicles (UAVs)** can be used for surveillance and espionage purposes. Drones equipped with cameras, listening devices, and other sensors can fly over foreign territories and gather intelligence.

What is Air Space and its Related Laws?

- **About:**
 - Air space, in international law, is the **space above a particular national territory**, treated as belonging to the **government controlling the territory**.
 - It **does not include outer space**, which, under the **Outer Space Treaty of 1967** is declared to be free and not subject to national appropriation.
 - The treaty, however, **did not define the altitude at which outer space begins and air space ends**.
- **Air Sovereignty:**
 - It is the fundamental right of a sovereign state to **regulate the use of its air space and enforce its own aviation law**.
 - The State controls the **entry of foreign aircraft into its territory** and that persons within its territory are subject to its laws.
 - The principle of air space sovereignty is **established through the Paris Convention on the Regulation of Aerial Navigation (1919)** and subsequently by other multilateral treaties.
 - Under the **1944 Chicago Convention**, contracting states **agree to permit aircraft registered in the other contracting states and engaged in commercial non-scheduled flights** to fly into their territory without prior **diplomatic permission** and, moreover, to pick up and discharge passengers, cargo, and mail.
 - This provision, in practice, has become a dead letter.
- **Prohibited Air Space:**
 - It refers to an area of air space within which flight of aircraft is not allowed, usually due to security concerns. It is one of many types of special use airspace designations and is depicted on aeronautical charts with the letter "P" followed by a serial number.
- **Restricted Air Space:**
 - Different from prohibited air space, in this space, entry is **typically forbidden for all aircraft and is**

not subjected to clearance from ATC (Air Traffic Control) or the air space's controlling body.

Quick Reaction Surface to Air Missile System

Why in News?

Indigenous **Quick Reaction Surface to Air Missile (QRSAM)** being developed by the **Defence Research and Development Organisation (DRDO)** is set to be tested again in April 2023.

- And a **Medium Range SAM** is being developed by the **DRDO in collaboration with Israel Aerospace Industries (IAI)**. The maiden launch of MRSAM Army Version was conducted in December 2020 and its induction is on and is ready for deployment.

What is QRSAM?

- **About:**
 - QRSAM is a **canister-based system**, which means that it is **stored and operated from specially designed compartments**.
 - In the canister, the **inside environment is controlled**, thus along with making its transport and storage easier, the shelf life of weapons also improves significantly.
 - The system is **capable of detecting and tracking targets** on the move and engaging targets with short halts.



- **Range and Mobility:**
 - It is a **short-range surface-to-air missile (SAM)** system, primarily designed and developed by DRDO

Note:

to provide a protective shield to moving armoured columns of the Army from enemy aerial attacks.

- The entire weapon system has been configured on a mobile and manoeuvrable platform and is capable of providing air defence on the move.
- It has been designed for induction into the Army and has a **range of 25 to 30 km**.

➤ **Functioning:**

- The QRSAM weapon ensemble consists of a **fully automated command and control system**.

- It also consists of two radars - Active Array Battery Surveillance Radar and Active Array Battery Multifunction Radar - with one launcher.

- Both radars have **360-degree coverage with “search on move”** and “track on move” capabilities.
- The system is compact, **uses a single stage solid propelled missile and has a mid-course inertial navigation system** with two-way data link and terminal active seeker developed indigenously by DRDO.



Note:

Miscellaneous

Highlights

- Uttarakhand's Anti Cheating Law
- Black Soldier Fly Larvae and Poultry Feed
- Hajj Pilgrimage

Uttarakhand's Anti Cheating Law

Why in News?

On February 11 2023, a protest in Dehradun over paper leaks and scams in **government recruitment tests** turned violent.

- On the following day, the **Uttarakhand Governor gave his assent to the Uttarakhand Competitive Examination (Measures for Control and Prevention of Unfair Means in Recruitment) Ordinance, 2023** to prevent the use of unfair means in exams.

What are the Provisions Related to Uttarakhand's Anti Cheating Laws?

- The **ordinance** has provisions for fines up to **Rs 10 crore and life imprisonment for the guilty**
- The ordinance is aimed at **preventing offences related to obstructing the sanctity of examinations, use of unfair means, leakage of question papers, and other irregularities.**
- It covers public examinations for **recruitment to posts under the state government**, autonomous bodies run by the government, and authorities, corporations, and institutions operated with grants of the state government.
- The **offences are cognizable, non-bailable, and non-compoundable.** The law is expected to **prevent irregularities in recruitment exams** and ensure that they are conducted transparently and fairly.

What are the Other Growing Concerns Related to Unfair Practices in Examination?

- The **use of technology for cheating is also a growing concern**, with cases of **impersonation, hacking, and the use of electronic devices** during exams.

- In this context, the **use of generative AI (artificial intelligence)** has also raised concerns about its potential to create fake identities, images, and even written content that can be used to cheat.
 - Generative AI is a technology that uses algorithms to create new content that mimics **human-generated content, such as images, text, and even voice.**
 - While this technology has many legitimate uses, **it can also be misused to create fake identities and content that can be used for cheating.**
- Therefore, as technology advances, it is **important for authorities and governments to also keep up with the latest developments** and implement measures to prevent its misuse.
 - This includes **investing in new technologies and training personnel** to detect and prevent the use of unfair means in exams and other contexts.

Black Soldier Fly Larvae and Poultry Feed

Why in News?

India is among the **top five chicken and egg producers in the world**, but there are challenges to the business for small poultry farmers because of the quality, quantity and cost of feed.

- **Black soldier fly**, since it has a high nutritional value can be one of the substitutes to address these challenges.

What are the Challenges Related to Poultry Feed?

- Feeds account for up to **70% of the entire cost of poultry production.** Besides, the conventional feed supplied to the poultry, majorly cereals and soya, competes with the **food demands of a growing human population.**

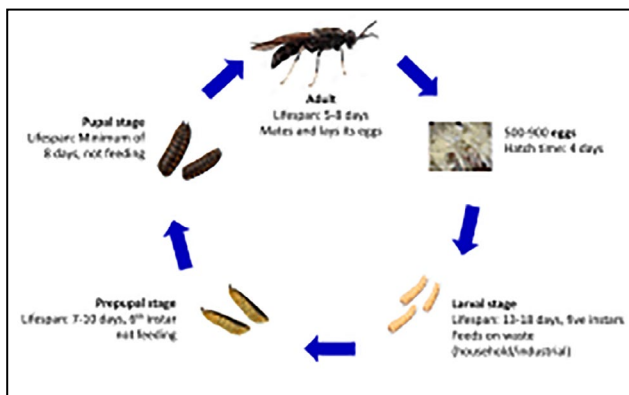
Note:



- In addition to rising cost, the **feed resource availability is a major determinant** of the sustainability of the poultry sector.
- One such alternative is **brewers dried grains**, a byproduct of the brewing industry.
 - Though rich in protein and amino acid, **its limitations include high moisture and fibre content.**
- **Rice bran is another economically viable alternative** to wheat in certain parts of the country. It has a comparable apparent metabolisable energy as wheat.
 - However, studies show that the laying performance of the **chicks declined on incorporation** of rice bran to the feed.
- The larvae of **black soldier fly (Hermetia illucens)**, for instance, have a **high nutritional value** and are easy to raise.

What is Black Soldier Fly?

- **About:**
 - The black soldier fly is a fly (Diptera) of the **Stratiomyidae** family that is commonly found in many parts of the world.
 - They are a dull, whitish color. They **feed on a variety of organic matter**, from rejected food waste to manure.
 - They also have high **waste-to-biomass conversion efficiency**.
 - This means, unlike hot-blooded mammals and birds, which use a lot of energy to keep themselves warm, **insects are efficient converters of food into body mass.**

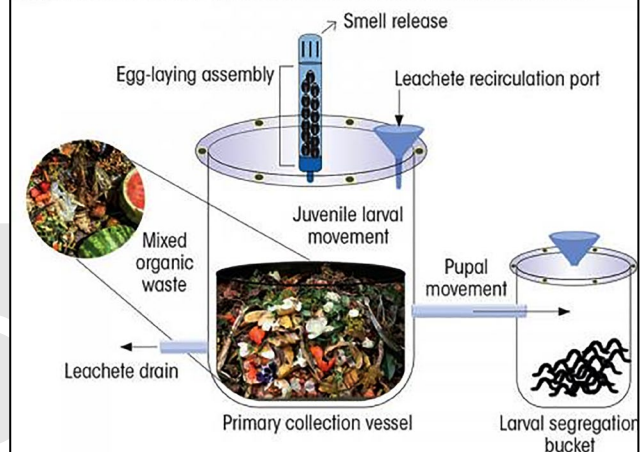


- **Utility:**
 - They can be a **low-cost, low footprint, eco-friendly** as well as natural feed companion to poultry farmers.

- The larvae are **capable of converting the organic waste into a wide range of useful vitamins and minerals.**
 - They are thus rich in **calcium, phosphorus, magnesium, sodium, potassium, iron, zinc**, copper, manganese and so on, which makes them a promising candidate for livestock feed.

WIN-WIN STRATEGY

The novel trapping mechanism uses organic food waste and some eggs of black soldier fly to churn out larvae to be used as feed



Hajj Pilgrimage

Why in News?

The ministry of Minority Affairs has **announced a new Haj policy** under which the application forms have been made available for free and the package cost per pilgrim has been reduced by Rs 50,000.

- The reduction of Rs 50,000 comes primarily in the form of relaxation of norms for foreign currency – **earlier a Haj pilgrim had to submit the equivalent of 2,100 Saudi Riyal**, amounting to approximately Rs 44,000, that was submitted to the Haj Committee for foreign exchange.

What is Hajj Pilgrimage?

- The Hajj is a religious **pilgrimage** to the holy city of Mecca in Saudi Arabia that is **mandatory for all able-bodied Muslims** who can afford it. It is **one of the Five Pillars of Islam** and is considered a central part of Muslim religious life.
 - **Five Pillars:**

Note:

- **Shahada (Faith):** The declaration of faith in the oneness of God and the acceptance of Muhammad as God's prophet.
 - **Salah (Prayer):** Performing the five daily prayers facing the Kaaba in Mecca.
 - **Zakat (Charity):** Giving a portion of one's wealth to those in need.
 - **Sawm (Fasting):** Fasting during the month of Ramadan.
 - **Hajj (Pilgrimage):** Making a pilgrimage to the holy city of Mecca at least once in a lifetime if one is physically and financially able.
- The Hajj takes place during the **Islamic month of Dhu al-Hijjah and involves several rituals.**
- Dhu al-Hijjah is the **twelfth and final month of the Islamic calendar.** It is considered one of the most sacred months in the Islamic year and is seen as a **time of renewal, spiritual growth, and reflection, and is considered an important time to strive for greater closeness with God.**
- Participating in the Hajj is seen as a **way to demonstrate one's devotion to God and to earn spiritual merit,** and it is a source of great pride and inspiration for many Muslims.

How is Hajj Pilgrimage Promoted by India?

- **Ministry of Minority Affairs** is the **nodal ministry** to conduct Haj pilgrimage in India.
- Haj pilgrimage for the Indian Pilgrims is conducted either through Haj Committee of India (HCoI), which is a statutory organization under the administrative control of Ministry of Minority Affairs or through the **Haj Group Organisers (HGOs) dully approved by Ministry.**
- Also, the Hajj pilgrimage is promoted by various **religious organizations, Islamic cultural centers,** and other government agencies.
- India signed the Haj 2023 bilateral agreement with Saudi Arabia. According to the agreement, a total of 1,75,025 Indian Haj pilgrims will be able to perform Haj, reportedly the highest in history.

Note:



Rapid Fire Current Affairs

Highlights

- Mpx
- Marburg Virus
- Judicial Review
- Mammatus Clouds
- World Radio Day
- Khanan Prahari Mobile App
- APEDA completes 37 years of its journey
- Nirman Se Shakti Initiative
- Maharishi Dayanand Saraswati Jayanti
- Deendayal Upadhyaya
- NRIs and G-20 Countries to have Access to UPI
- First Sundarban Bird Festival
- Mysterious Ring on a Dwarf Planet
- Exercise TARKASH
- Moment Magnitude Scale
- Grammy Awards 2023
- RBI Hikes Repo Rate
- Israel's Sniffing Robot with Locust Antennae
- Operation Dost
- Record Decline in LWE Related Violence
- Possible Landing Sites for Chandrayaan 3
- India Seeks Armed Predator Drones from US
- Steps Towards Prison Reforms
- North Star
- Naval LCA Lands on INS Vikrant
- Southern India's First Industrial Corridor Project
- Yuva Sangam Portal
- World Wetlands Day 2023
- Sant Guru Ravidas Jayanti
- Jupiter Becomes the Planet with Most Moons
- 36th Surajkund International Crafts Mela
- VIHANGAM Drone Technology
- Operation SADBHAVANA
- FAO's Findings on World Food Prices
- Ukraine's Odesa in UNESCO's World Heritage List
- 47th Raising Day of ICG
- Visakhapatnam: Andhra Pradesh's Capital
- Armenia-Azerbaijan Conflict
- Khadi Fashion Show
- WAN-IFRA
- IIMR in Hyderabad: Centre of Excellence (CoE)
- Myanmar Extends Emergency Rule
- Deep Ocean Mission
- MISHTI Initiative for Mangroves
- Exercise Trishakti Prahar

Mpox

According to the **World Health Organization (WHO)**, as many as 85,765 confirmed and **1,382 probable cases of mpox (monkeypox) were reported from 110 countries since 1st January, 2022**. The **United States was the most affected**, recording 29,948 confirmed cases.

WHO **assessed the global risk as 'Moderate'** and also announced that it would **prefer to refer to the disease as mpox rather than monkeypox**.

Monkeypox is a **zoonotic viral disease with symptoms similar to smallpox** but is less contagious. It was **first diagnosed in humans in 1970 in the Democratic Republic of Congo in Africa**. Vaccines used to eradicate smallpox

provides protection against mpox. New vaccines against the disease have also been developed and approved.

Read More: Monkeypox, Smallpox, World Health Organisation (WHO)

Marburg Virus

Equatorial Guinea, Central Africa **has confirmed its first-ever outbreak of Marburg virus disease**.

According to the World Health Organisation (WHO), the Marburg virus disease is **highly contagious and causes haemorrhagic fever**. It begins abruptly, with high fever, severe headache and severe malaise. **Of every 100 people who contract the virus, 88 are likely to die**. The virus is

Note:



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transmitted to people from fruit bats and spreads among humans through direct contact with the bodily fluids of infected people, surfaces and materials.

The rare virus was first identified in 1967 after it caused simultaneous outbreaks of disease in laboratories in Marburg, Germany and Belgrade, Serbia.

Read More: [Marburg Virus](#)

Judicial Review

Recently, the Supreme Court explained that “suitability” of a candidate cleared by the Collegium for appointment as a judge in a constitutional court cannot be a subject of judicial review.

Judicial Review is a type of court proceeding in which a judge reviews the lawfulness of a decision or action made by a public body. It is the power exerted by the courts of a country to examine the actions of the legislatures, executive and administrative arms of government and to ensure that such actions conform to the provisions of the nation’s Constitution.

Judicial review is considered a basic structure of the constitution (Indira Gandhi vs Raj Narain Case 1975).

Some of the provisions that support Judicial Review: Article 372 (1), Article 13, Articles 32 and 226, Article 251 and 254, Article 246 (3), Article 245, Articles 131-136, Article 137

Read More: [Judicial Review, Supreme Court, Basic Structure of the Constitution, Collegium System](#)

Mammatus Clouds

Recently, a cluster of clouds that appear like bubbles from the bottom are observed hovering over Nebraska, United States.

The cloud bottoms appear like bubbles because moist warm air that rises and cools will condense into water droplets at a specific temperature, which usually corresponds to a very specific height. As water droplets grow, an opaque cloud forms. Under some conditions, however, cloud pockets can develop that contain large droplets of water or ice that fall into clear air as they evaporate. Such pockets may occur in turbulent air near a thunderstorm. Resulting in the appearance of mammatus clouds.



World Radio Day

The Prime Minister of India greeted radio listeners and others associated with the broadcasting medium on ‘World Radio Day’.

It is celebrated on 13th February, every year. The theme for this year is “Radio and Peace”.

On 3rd November, 2011, the 36th session of UNESCO declared World Radio Day to be celebrated on 13th February, as UN Radio was established by the United Nations on 13th February, 1946. The day was later adopted by the UN General Assembly in 2012 as an International Day.

The day is observed every year to raise awareness among the public and the media about the importance of radio and to encourage access to information through radio.

India has around 479 radio stations making All India Radio one of the biggest broadcasters in the world. It covers around 99.19% of the Indian population.

Read More: [Community Radio](#).

Khanan Prahari Mobile App

The Government of India has launched one mobile app namely “KhananPrahari” and one web app Coal Mine Surveillance and Management System (CMSMS) for reporting unauthorized coal mining activities.

The mobile app is developed by Ministry of Coal that enables citizens to report incidents of illegal coal mining using geo-tagged photos and textual information from the location of the incident.

Statutory measures taken in this regard include: Coal Mines (Nationalisation) Act, 1973, Mineral Concession Rules, 1960, Colliery Control Rules, 2004, Mines & Minerals (Development & Regulation) Act, 1957.

Note:



drishti

Further, **concrete walls** have been erected on the mouth of the abandoned mines to prevent access and illegal activities in these areas. Also, **existing security/CISF personnel are being trained** and **Committees/task forces have been formed at different levels** in some subsidiaries of CIL (Coal India Ltd.) to monitor different aspects of illegal mining.

Read More: [Coal sector in India.](#)

APEDA completes 37 years of its journey

The Agricultural and Processed Food Products Export Development Authority (APEDA), which was **established in 1986 through an Act of Parliament** works under the **Ministry of Commerce and Industry**. It is mandated with **export promotion of agricultural commodities**. Additionally, APEDA has been entrusted with the responsibility to **monitor import of sugar**.

In line with ideas of ‘vocal for local’ and ‘Atmanirbhar Bharat’, APEDA has been focusing on **promotion of exports of locally sourced GI (Geographical Indications)** tagged as well as **indigenous, ethnic agricultural products**.

India has become the **world’s eighth-largest exporter of agricultural products**, with exports worth **USD 24.77 billion in the 2021-22**, based on WTO trade data.

Some of the recent initiatives of APEDA include Farmer Connect Portal, Varanasi Agri – Export Hub (VAEH); Millets Portal for promotion of millets, etc.

Read More: [APEDA.](#)

Nirman Se Shakti Initiative

Employees’ State Insurance Corporation (ESIC) presented an initiative named as ‘Nirman Se Shakti’ to **modernize infrastructure**.

The ‘Nirman Se Shakti’ initiative includes **upgradation/modernization of ESI Scheme (ESIS) hospitals and dispensaries in a phased manner**, **formulation of standard design for 100/200/500 bedded hospitals** with better modern facilities, **online real-time dashboard for project monitoring/supervision**, adoption of **new building technologies to ensure quality of construction**, **elimination of delays, cost overrun, digitalization of land/property documents** etc.

The Employees’ State Insurance Scheme (ESI) is an **integrated measure of social Insurance for worker**

population and immediate dependent or family embodied in the **Employees’ State Insurance Act, 1948**.

Read More: [ESIC.](#)

Maharishi Dayanand Saraswati Jayanti

Recently, the Prime Minister of India **inaugurated the year-long (two-year) celebrations commemorating the 200th birth anniversary of Maharishi Dayanand Saraswati**. He also released a logo for commemoration.

Maharishi Dayanand Saraswati Jayanti is **celebrated every year to mark the birth anniversary of the Maharishi Dayanand Saraswati**.



He was **born on 12th February 1824 in Tankara, Gujarat** in a Brahmin family. Dayananda’s views were **published in his famous work, Satyarth Prakash (The True Exposition)**.

He was an **Indian philosopher, social leader and founder of the Arya Samaj**. His vision of India included a classless and casteless society. **He took inspiration from the Vedas and considered them to be ‘India’s Rock of Ages’**. He also gave the slogan **“Back to the Vedas”**.

The **DAV (Dayanand Anglo Vedic) schools came into existence in 1886** to realize the vision of Swami Dayanand Saraswati.

Read More: [Arya Samaj](#)

Deendayal Upadhyaya

The Prime Minister has **paid tributes to Pandit Deendayal Upadhyaya Ji on his Purnima Tithi (Death Anniversary)**.



He was **born in 1916 in Nagla Chandrabhan village, now called Deendayal Dham** in Uttar Pradesh. He **joined the Rashtriya Swayamsevak Sangh (RSS)** and dedicated himself to full-time work in RSS from 1942. He **started a monthly magazine “Rashtra Dharma”, a weekly ‘Panchajanya’, and a daily ‘Swadesh’**.

In 2019, Prime Minister **unveiled a 63-foot tall statue of Pandit Upadhyaya** while inaugurating the Pandit

Note:

Deendayal Upadhyaya Memorial Centre in Padoa on the Varanasi-Chandauli border.

Read More: Pandit Deendayal Upadhyay National Welfare Fund for Sportspersons (PDUNWFS)

NRIs and G-20 Countries to have Access to UPI

The Reserve Bank of India (RBI) permitted all inbound travellers from the Group of Twenty (G-20) countries and Non-resident Indians (NRIs) to access Unified Payment Interface (UPI) for their merchant payments/ Person to Merchant (P2M) at select airports while they are in the country.

According to the RBI, banks and non-banks authorised to issue **Prepaid Payment Instruments (PPIs)** can issue rupee-denominated full-KYC PPIs to foreign nationals and NRIs visiting India. The conversion to the Indian rupee can be carried out only by entities authorised to deal in foreign exchange **under Foreign Exchange Management Act, 1999 (FEMA)**.

PPIs are payment instruments **that facilitate purchase of goods and services** against the value stored on such instruments. The value stored on such instruments **represents the value paid for by the holder, by cash, by debit to a bank account, or by credit card**

Read More: FEMA, RBI, G-20, UPI, NRIs

First Sundarban Bird Festival

Recently, 145 different bird species were sighted during the first Sundarban Bird Festival. The first-ever festival was organised by the Sundarban Tiger Reserve (STR) division of the West Bengal Forest Department, where several teams visited different areas inside the Sundarban Biosphere Reserve. **The Bird Festival provides baseline data on Sundarbans' bird species diversity.**



The **Zoological Survey of India (ZSI)** in 2021, had recorded 428 bird species in the Sundarbans which is **one-third of all the avian species** (derived from birds) found in the country.

Read More: Importance of Sundarbans, Biosphere Reserves in India, International Day for Biosphere Reserves

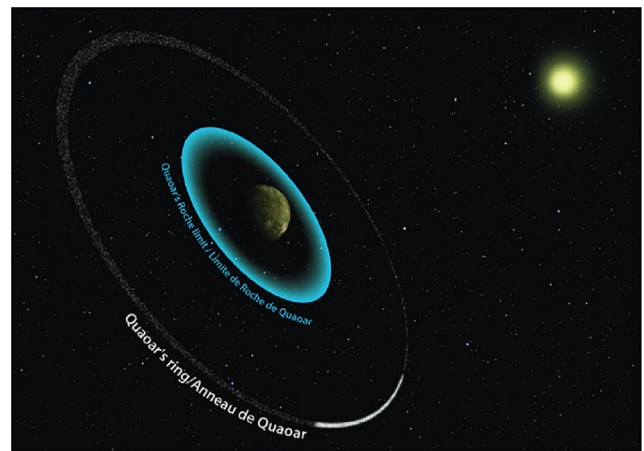
Mysterious Ring on a Dwarf Planet

In a new study, **astronomers have found a ring around a dwarf planet**, located in the Kuiper Belt at the solar system's edge, **called Quaoar**. Astronomers believe the **new study points to the possibility of discovering more rings around smaller planets** like Quaoar in the outer solar system, which **might expand our understanding of planetary ring systems.**

Quaoar (named after a god of creation in Native American mythology) is **roughly half the size of Pluto and orbits beyond Neptune**. It also has a moon of its own, which is **known as Weywot**. The **rings of the planet are positioned at a distance of over seven planetary radii** (distance between a planet's centre and its surface) which is **much further away from other planets that possess rings.**

According to the study, **the ring lies far away from the Roche limit** — a mathematically determined distance beyond which rings aren't supposed to exist.

Planetary rings possess small chunks of ice and other materials that orbit a larger object. Only Saturn, Jupiter, Uranus and Neptune, including two other minor planets, Chariklo and Haumea, **are known to possess rings.**



Read More: Pluto

Note:

Exercise TARKASH

The exercise named TARKASH by the National Security Guard (NSG) and US Special Operations Forces (SOF) is currently underway in Chennai.

With chemical and biological warfare being recognised as a coming threat to the world, an ongoing Indo-US joint exercise has for the first time included a Chemical, Biological, Radiological and Nuclear (CBRN) terror response in its drill.

The objective of the joint exercise was to rapidly neutralise the terrorists, rescue the hostages safely and deactivate the chemical weapons being carried by the terrorists.

CBRN weapons, which are also classified as Weapons of Mass Destruction (WMDs), have been used by States and terror elements in the past. The most recent use of CBRN in the form of a sarin gas attack was witnessed in Syria in 2017.

According to the UN, the prospect of non-state actors, including terrorists and their supporters, gaining access to and using WMDs or CBRNs is a serious threat to international peace and security.

Read More: [Biological Weapon and Chemical Weapon Conventions, India-US Relations](#)

Moment Magnitude Scale

The recent earthquake that hit Turkey recorded a magnitude of 7.8 on the Moment Magnitude scale.

Magnitude is generally measured by Richter Scale (developed by Charles Francis Richter in 1935). It is a logarithmic scale where each step represents a 10x increase in magnitude (an earthquake measuring 7 has 10x the magnitude than an earthquake measuring 6).

However, as it is strictly valid only for certain frequency and distance ranges, a better way to measure magnitude - Moment Magnitude Scale (denoted as Mw) was developed.

The scale measures the total energy released in the earthquake and hence, provides a more accurate estimate of magnitude, especially as one goes higher up the scale. Moment Magnitude also uses more variables to calculate the energy released using seismic moment.

Other scales like the Modified Mercalli Scale (MMS) and the Rossi-Forel scale measure the intensity - the amount of shaking at a particular location. MMS ranks earthquake intensity on a scale of I (not felt) to XII (extreme).

Read More - [Earthquake](#), [Earthquake Infographics](#)

Section 69 (A) of IT Act

MeitY recently issued orders to block 138 online betting platforms and 94 money lending apps on an “urgent” and “emergency” basis under Section 69 (A) of the IT Act, 2000. Some of the sites and apps were allegedly linked to China and contained “material prejudicial to the sovereignty and integrity of India”.

Over the past 3 years, there have been several complaints of extortion/harassment from people who borrowed small amounts through such money-lending apps, often at exorbitantly high interest rates.

Section 69 of the IT Act allows the govt. to issue content-blocking orders to online intermediaries such as Internet Service Providers, telecom service providers, web hosting services, search engines, online marketplaces, etc. provided such a content is deemed a threat to India’s national security, sovereignty, or public order.

Read More [Information Technology Act’s Section 69A](#), [Ban on Chinese Apps](#)

Grammy Awards 2023

Grammy Award (originally named Gramophone Award) is a series of awards presented annually in the US by the National Academy of Recording Arts & Sciences (NARAS) or the Latin Academy of Recording Arts & Sciences (LARAS only for recordings in Spanish/Portuguese languages). This annual event to recognise musical achievements was started in 1959 to respect the performers for the year 1958. The honorees receive a golden statuette of a gramophone.

Indian composer (Bengaluru-based) - Ricky Kej won a Grammy for Best Immersive Audio Album for his most recent album *Divine Tides* with rock-legend Stewart Copeland, making him the only Indian to win three Grammy awards. Ricky has previously won 2 Grammy Awards under the Best New Age Album category - ‘Winds of Samsara’ (in 2015) and *Divine Tides* (in 2022).

Read More - [Indian Song wins Golden Globe Award](#)

RBI Hikes Repo Rate

In a move to further increase the lending/deposit rates, the Reserve Bank of India (RBI) raised the repo rate by 25 bps to 6.5% - 6th rate hike in a row.

Note:

In the last meeting for the current fiscal (2022-23), the **Monetary Policy Committee (MPC)** projected the real GDP growth at 6.4% (for FY 23-24).

Repo Rate is the rate at which the RBI lends money to commercial banks.

Read More - [Monetary Policy Committee \(Infographic\)](#)

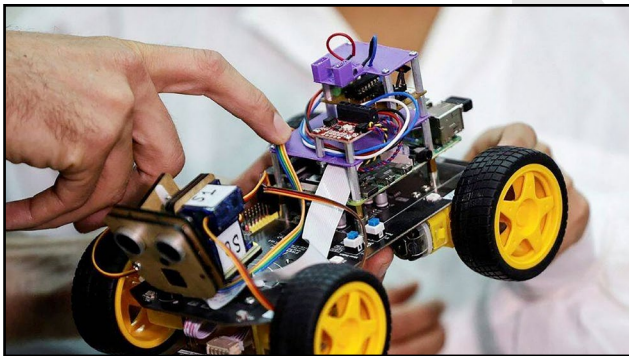
Israel's Sniffing Robot with Locust Antennae

The scientists in Israel have developed a new **sniffing robot equipped with a biological sensor** that uses the antennae of locusts (locusts smell with their antennae and have an acute sense of smell).

This makes the robot **far more sensitive than existing electronic sniffers** and helpful in **advance disease diagnosis** and **better security checks**.

The researchers placed the insect's antenna between two electrodes on the robot that send electrical signals as a response to a nearby odour. The robot is able to **identify different scents with machine learning**.

Read More - [Locust, Machine Learning](#)



Operation Dost

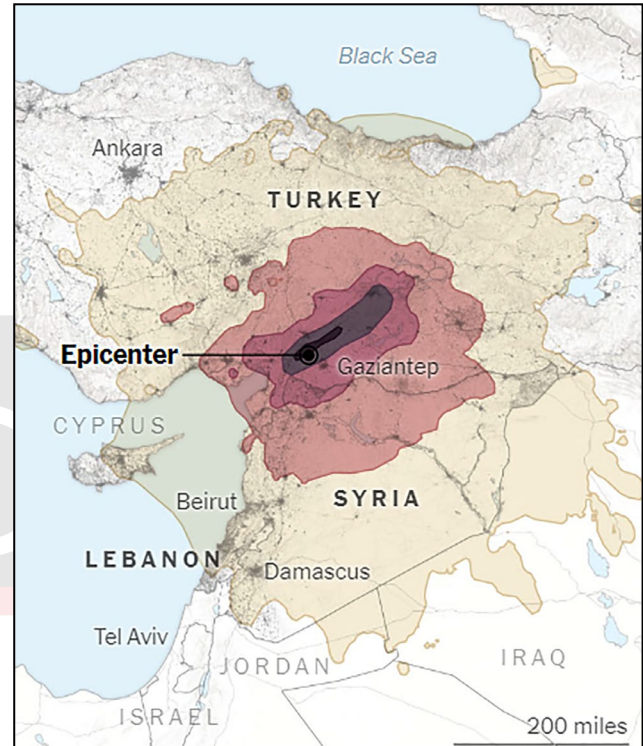
India, under '**Operation Dost**' has sent its sixth plane carrying **National Disaster Response Force (NDRF) personnel**, essentials, and medical equipment for the earthquake-hit Turkey. The 6th flight carries **more rescue teams, dog squads, and essential medicines**. A **field hospital under Operation Dost** has been set up by the Indian Army in Hatay province of Turkey. India has also sent a **transport aircraft with medical supplies to Syria**.

The **earthquake** of **magnitude 7.7** on the Richter scale hit Turkey and Syria on 6 Feb 2023 followed by a series of aftershocks causing huge devastation, major

loss of lives and damage to infrastructure in the two countries.

Operation Dost **symbolises that India is a friend of Turkey** and the two must deepen their relations.

Earlier, the **NDRF was sent to two similar international operations** – the **2011 Japan triple disaster** (earthquake, tsunami and nuclear meltdown) and the **2015 Nepal earthquake**.



Read More - [India-Turkey Relations, India's Humanitarian Assistance](#)

Record Decline in LWE Related Violence

The Union Home Minister in a meeting said that **for the first time in 4 decades**, the number of **deaths of civilians and security forces** in Left Wing Extremism (LWE) **came down under 100 in 2022**. Violence related to LWE had come down by **76% in 2022 as compared to 2010**.

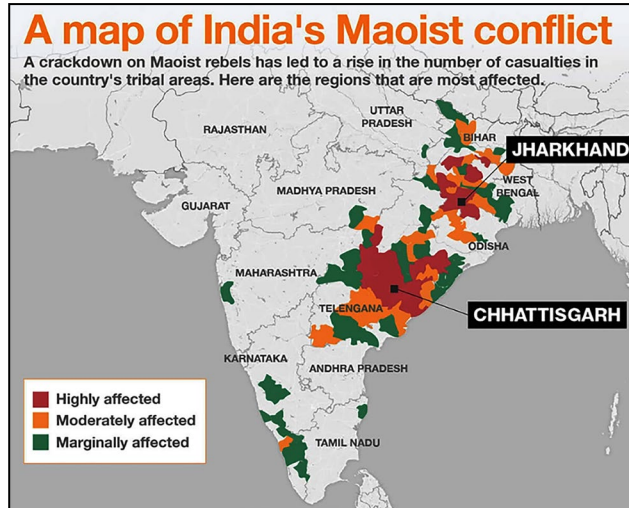
LWE organizations are the groups that **try to bring change through violent revolution**. They are **against democratic institutions** and use violence to subvert the democratic processes at the ground level.

The MHA's policy to deal with LWE is a three-pronged approach – **strategy to curb extremist violence** with

Note:

ruthless approach, **better coordination between Centre and states**, and eliminating support for LWE through **public participation** in development.

As part of the goal to ensure all-round development in LWE affected areas; construction of **11,811 km of roadways had been completed** to improve road connectivity, **2,343 mobile towers had been installed** during the last 8 years, 245 **Eklavya Model Residential Schools** had been sanctioned in 90 LWE-affected districts and **121 of them were now functional**.



Read More - [Left Wing Extremism](#)

Possible Landing Sites for Chandrayaan 3

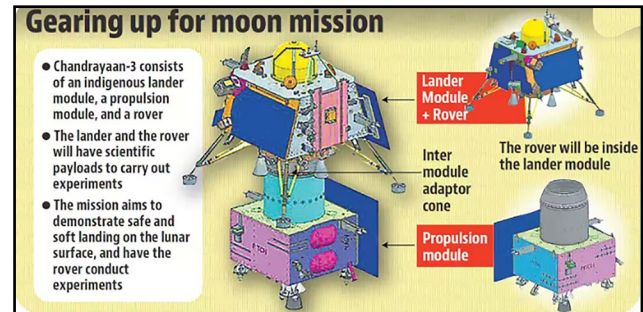
The **Indian Space Research Organisation (ISRO)** has finalised the coordinates of three **possible landing sites for its third lunar mission – Chandrayaan-3** – expected to be launched later in 2023. The prime landing site for Chandrayaan-3 lies between **Manzius U and Boguslawsky M craters** on the moon. The moon's **southern polar region is of particular interest to scientists because there's a possibility of finding water ice**.

Chandrayaan programme, also known as the Indian lunar exploration programme, is an ongoing series of outer space missions by **ISRO**.

Chandrayaan-1 was launched in 2008 and was successfully inserted into lunar orbit. **Chandrayaan-2** was successfully launched and inserted into lunar orbit in **2019**, but its lander crash-landed on the moon's surface when it deviated from its trajectory while attempting to land in Sept 2019. Chandrayaan-3 will be launched by

Launch Vehicle Mark-3 (LVM3) rocket from Satish Dhawan Space Centre, Sriharikota.

Other upcoming ISRO missions for 2023 include - **Aditya-L1**, India's first dedicated scientific mission to study the sun, and **Gaganyaan's uncrewed 'G1' mission**.



Read More - [Chandrayaan-3](#)

India Seeks Armed Predator Drones from US

PREDATOR DRONES TO GUARD INDIAN COASTLINE?

MQ9 PREDATOR DRONE

SALIENT FEATURES

- Can fly at altitude of **50,000 feet**
- Can fly non-stop for more than **24 hours**
- Can detect movement of objects as small as a **football**

HOW WILL IT HELP INDIA

- Major boost for collecting maritime intelligence
- Will further boost security of maritime assets in Indian Ocean
- Can compliment Predator Avenger systems already requested for IAF.

The Indian armed forces are seeking **18-armed Predator MQ 9A drones from the US**. The Predator armed drones can **fly up to 50,000 feet for up to 24 hours and**

Note:

carry an option of **Hellfire air-to-ground missiles** for high-value targets or **air-to-air missiles** to bring down aerial enemy targets.

Of these 18 drones from the US, **6 drones will be provided to each of the three services.**

The Indian Navy already has two **General Atomics-manufactured Sea Guardian (MQ 9B) drones** for maritime domain awareness on lease from the US. Currently, the **navy is the leading service in armed drone acquisition and deployment.**

The **National Technical Research Organisation (NTRO)** (an electronic and spatial intelligence organisation) will also **soon acquire 8 Indian-manufactured Medium Altitude Long Endurance (MALE) drones** for border surveillance. The MALE drones have been **built with the help of Israel** in a joint venture in Gujarat.

Both China and Pakistan have the **Wing Loong II armed drones** in their arsenals, therefore, the acquisition of these surveillance and predator drones is significant from India's security perspective.

Read More - Atma Nirbhar India in Defence Production, India-US Defence Ties

Steps Towards Prison Reforms

Rajasthan has adopted an open prison model where convicts stay on community land **without high walls or strict surveillance.** The move has promoted a **reformatory form of punishment** and succeeded in transforming the lives of inmates. The state has **opened 40 such camps.**

Under the system, **Prisoners who have served 1/3rd of their sentences are eligible** to shift to the open jails. In these open camps, **each inmate can stay with 3 family members,** some are also established at **gaushalas** to enable the inmates to work at the cow shelters.

As minimum-security facilities, **open prisons require 92.4% less staff** compared to closed jails and the **cost incurred per prisoner is only ₹500/month.**

In another significant move, **Tihar jail is installing AI-powered CCTV cameras** to monitor inmates and fight crime. The premises will also have a **real-time grievance redressal system** and **optical fibre network.** **Tihar jail is the largest prison complex of South Asia.** With a capacity to house **5,200 inmates,** it has **12,762 prisoners at present.** The overcrowding has made monitoring inmates difficult leading to commitment of many crimes from inside the jail.

Read More - Need for Prison Reforms

North Star

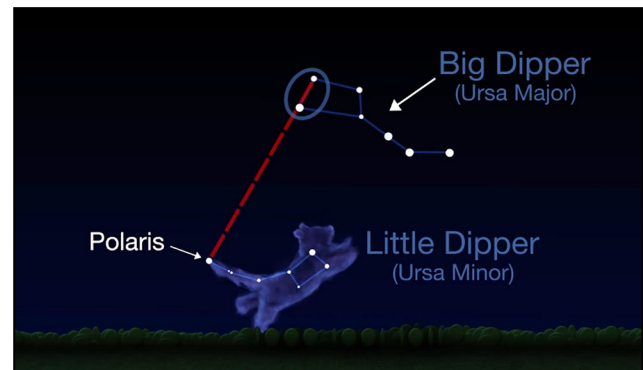
Polaris, known as the **North Star/Pole Star,** is a very bright star (**~2,500 times more luminous** than the Sun) and is **part of the constellation Ursa Minor** (~323 LY away from the Earth).

Polaris is less than 1° away from the north celestial pole, almost in direct line with the Earth's rotational axis, therefore, it **appears to sit motionless in the northern sky** with all the other stars appearing to rotate around it.

Its position and brightness have allowed **humans to use it for navigation since late antiquity.** The elevation of the star above the horizon gives the approximate latitude of the observer. However, **upon crossing the equator to the south, the North Star is lost over the horizon, and hence stops being a useful navigational aid.**

Polaris seems to have been **first charted by the Roman mathematician/astronomer Ptolemy** (165 - 85 BC).

As per NASA, **"North Star" is "a title that passes to different stars over time";** as the Earth's axis of rotation wobbles, the celestial pole "wanders in a slow circle over the eons, sweeping past different stars". **About 14,000 years ago, the celestial pole pointed towards the bright star Vega,** and "it will again point to Vega in about 12,000 years".



Naval LCA Lands on INS Vikrant

The Naval variant of India's indigenous **Light Combat Aircraft (LCA)** made its **maiden landing on board the INS Vikrant,** marking a milestone towards the **Navy's**

Note:



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self-reliance plans. This was followed by a landing and take-off by a twin-engine MiG-29K fighter jet (Russian origin).

INS Vikrant, India's first indigenous aircraft carrier commissioned in Sept 2022, is currently in the process of getting operationalised.

In Jan 2020, DRDO demonstrated a successful landing of Naval LCA on INS Vikramaditya along the lines of which the DRDO is in the process of developing a Twin Engine Deck- Based Fighter (TEDBF) for INS Vikrant.

INS VIKRANT REBORN

India's First, Indigenous-Built Aircraft Carrier

VITAL STATS

- ₹20,000 Crore Cost
- 45,000 tonnes Weight
- 262 metres Length
- 62 metres Width

DID YOU KNOW?

- Flight deck is the size of two football grounds
- 8 power generators enough to light up Kochi city



AIR POWER TO BE DEPLOYED

- MiG-29K Fighter Jets
- Kamov-31 Helicopters
- Mi-60R Multi-role Helicopters

TOP FEATURES

- First aircraft carrier to be constructed in India
- Largest warship to be built in India
- Has capacity to operate 30 aircraft
- 15 decks, multi-speciality hospital, pool
- Specialised cabins for women officers

Read More - [INS Vikrant](#)

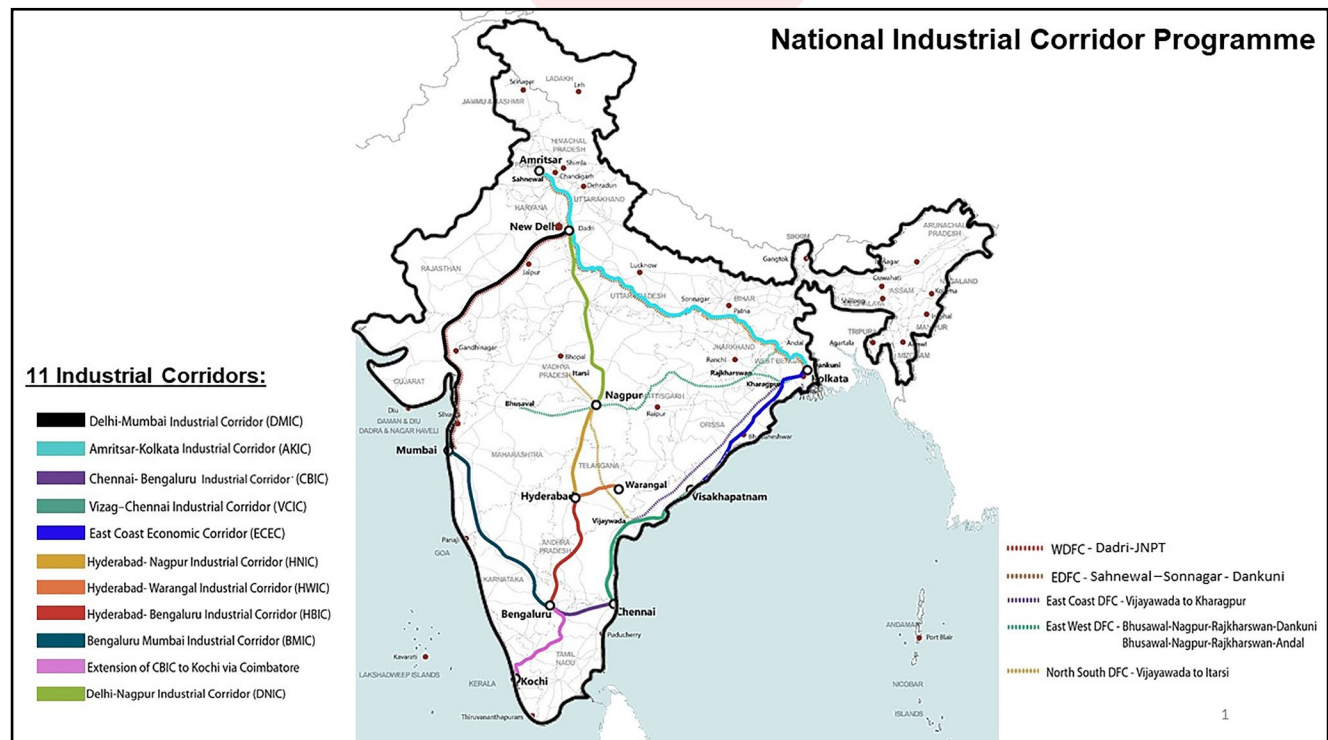
Southern India's First Industrial Corridor Project

The Prime Minister of India laid the foundation stone of southern India's 1st Industrial Corridor Project to be implemented at Tumakuru, spread over 8500 Acre of land, under the **Chennai-Bengaluru Industrial Corridor**.

The Tumakuru Industrial Township has been planned in line with the principles of PM-GatiShakti to ensure last mile multimodal connectivity to the economic zone.

The Govt of India (via **NICD and Implementation Trust**) and the Govt of Karnataka are developing the Industrial Township at Vasanthanarasapura in 3 phases in Tumakuru district through the project **Special Purpose Vehicle (SPV)**.

Under the **National Industrial Corridor Development (NICD) Programme**, 32 greenfield industrial smart cities under 11 industrial corridors are being developed with world class Plug-n-Play infrastructure.



Read More - [PM Gati Shakti](#)

Note:

Yuva Sangam Portal

The “Yuva Sangam” registration portal was recently launched at Indira Gandhi National Centre for the Arts (IGNCA), New Delhi.

Yuva Sangam is an initiative to build close ties between the youth of the Northeast Region and the rest of India under the spirit of Ek Bharat Shreshtha Bharat. Under this initiative, over 20000 youth will travel across India and gain a unique opportunity of cross-cultural learning. The program is an opportunity for the youth of NER to see India.

Read More - [North-East India](#)

World Wetlands Day 2023

The State Govts and UT administrations across India

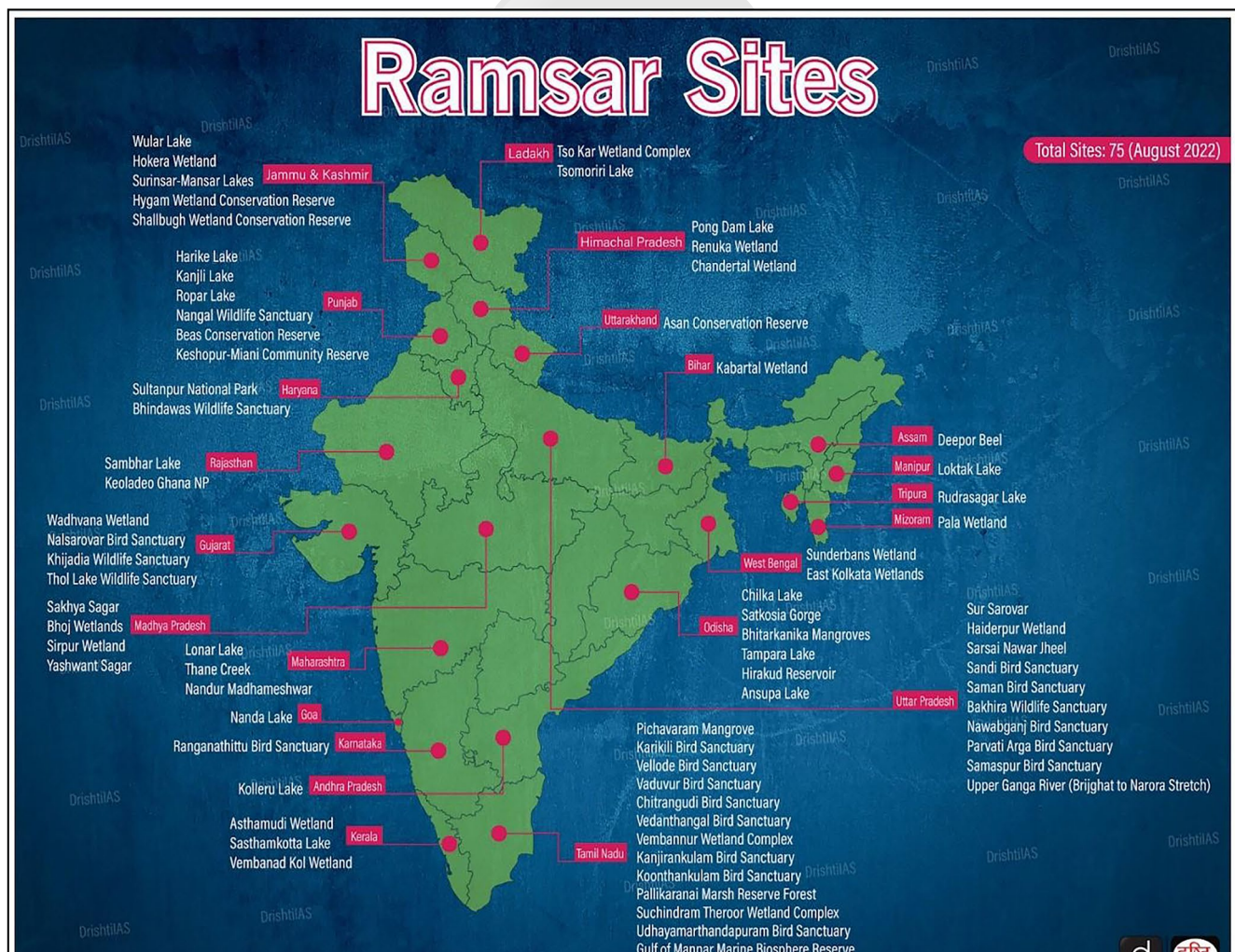
celebrated World Wetlands Day (WWD) at all 75 Ramsar sites on 02nd Feb 2023.

The 2023 theme for World Wetlands Day is ‘Wetland Restoration’ highlighting the urgent need to prioritise wetland restoration.

The Union Minister for Environment, Forest and Climate Change launched the ‘Save Wetlands Campaign’ structured on a “whole of society” approach for wetlands conservation.

World Wetlands Day is celebrated all over the world to commemorate the signing of the Ramsar Convention on Wetlands of International Importance (1971).

India has been a party to the Convention since 1982 and has so far declared 75 wetlands as Ramsar across 23 states/UTs. India has the largest network of Ramsar Sites in Asia.



Read More - [World Wetlands Day, Ramsar Sites, Ramsar Convention \(Infographics\)](#)

Note:

Sant Guru Ravidas Jayanti

The birthday of Sant Guru Ravidas was observed on **05th Feb 2023**. Guru Ravidas Jayanti is celebrated on **Magh Purnima** (full moon day in the Magh month of the Hindu lunar calendar).



Guru Ravidas was a **15th century saint and reformer of the Bhakti movement** who gained prominence due to his **belief in one God** and his unbiased religious poems. He dedicated his whole life to the **abolition of the caste system** and openly despised the notion of a **Brahminical society**. Around 41 of his poems were included in '**Guru Granth Sahib**', the religious text of the Sikhs.

[Read More - Guru Ravidas Jayanti](#)

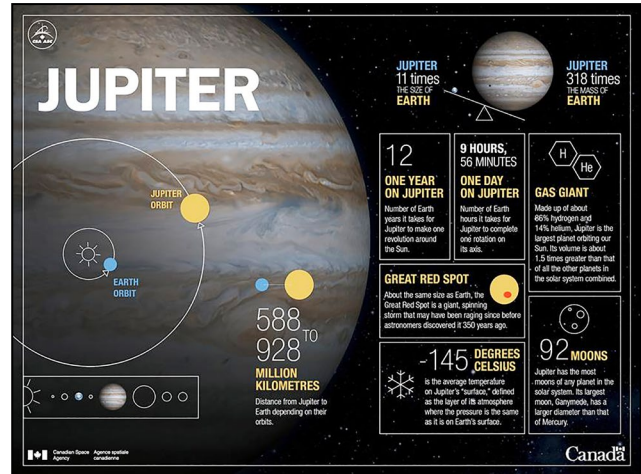
Jupiter Becomes the Planet with Most Moons

Astronomers recently discovered **12 new moons around Jupiter**, increasing the total number of moons it has to **92 - the largest number** any planet on our solar system has (**Saturn has 83 moons**).

The moons were **discovered using telescopes in Hawaii and Chile** in 2021 and 2022 and have been added to a list kept by the **International Astronomical Union's Minor Planet Centre** (size of these moons ranges from 1-3 kms).

Upcoming missions to Jupiter include - (a) **ESA's spacecraft to Jupiter** to study the planet and some of its biggest, icy moons (in 2023), (b) **NASA's Europa Clipper** to explore **Jupiter's moon Europa** which could harbour an ocean beneath its frozen crust (in 2024). **NASA earlier launched Mission Lucy** to explore the **Jupiter Trojan Asteroids**.

Apart from Jupiter and Saturn, **Uranus has 27 confirmed moons, Neptune 14, Mars 2 and Earth has 1 moon while Venus and Mercury have no moons.**



[Read More - Jupiter and Europa](#)

36th Surajkund International Crafts Mela

Recently, the **Vice President of India** inaugurated the **36th Surajkund International Crafts Mela** at Faridabad, Haryana where he urged everyone to **consider locally produced handicraft items** when looking for gifts to their friends and relatives.

This fair is held every year in the month of February, organised by the **Surajkund Mela Authority & Haryana Tourism** in collaboration with **Union Ministries of Tourism, Textiles, Culture and External Affairs**. The aim is to **promote the pool of skilled artisans**, who used indigenous technology, but were suffering due to the cheaper machine-made imitations.

The **North Eastern Region (NER)** is the **Theme State for the year 2023** as the NER is a very important stakeholder in India's Look-East & Act-East Policy. The partner country for year 2023 is **Shanghai Cooperation Organisation (SCO)**.

The **Union Budget 2023-24** has also envisaged the **PM Vishwakarma Kaushal Samman**, to help craftsmen expand the reach and quality of their creations. Other initiatives include **Mudra Yojana, One District, One Product** and **Unity Malls**, etc.

[Read More - Surajkund International Crafts Mela](#)

VIHANGAM Drone Technology

Mahanadi Coalfields Ltd (MCL), the **premier CPSE (Central Public Sector Enterprise)** under the Ministry of

Note:



drishti

Coal has introduced **drone technology in coal mines by launching a web-based portal VIHANGAM** along with a drone and ground control system.

The portal allows an **authorised person to access real time drone video from the mine**. There is a **control station that flies the drone which can be operated anywhere via the portal**. This pilot project is currently operational at **Bhubaneswari and Lingaraj** opencast mines of Talcher Coalfields (Odisha).

Drone technology is being used for environmental monitoring and photogrammetric mapping of mine for digitalisation of the mining process. MCL has **also introduced a Robotic Nozzle Water Sprayer** in its coal stockyard to carry out difficult jobs like firefighting and dust suppression.

Mahanadi Coalfields Ltd (MCL) **contributes more than 20% of the total coal produced** in India.

Read More - VIHANGAM, Drone Technology

Operation SADBHAVANA

As part of 'Operation SADBHAVANA', Indian Army is undertaking multiple welfare activities such as **Army Goodwill Schools, Infra-development projects, education tours etc.** for the children living in remote areas of **UT of Ladakh**.

The Indian Army is presently running 7 Army Goodwill Schools under 'Operation SADBHAVANA' in Ladakh Region. **More than 2,200 Students are currently studying in these schools.**

Under this initiative (in FY 22-23), **medical camps, veterinary camps**, provision of medical equipment, upgradation of medical infrastructure and **staffing of Medical Aid Centres** have been provided at various remote locations in Ladakh. **Women in remote areas of Ladakh are also being inducted in Vocational Training Centres, Women Empowerment Centres and Computer Centres** organised and funded through SADBHAVANA.

Operation SADBHAVANA (Goodwill) is a unique humane initiative **undertaken by Indian Army and formalised in 1990s** in the erstwhile State of J&K to address aspirations of people affected by **scrooge of terrorism**.

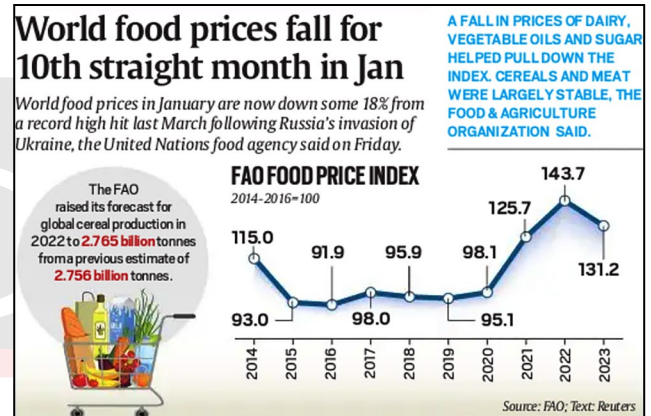
FAO's Findings on World Food Prices

As per the Food and Agriculture Organization (FAO), the **World food prices fell in January 2023 for the 10th**

consecutive month. The **FAO Food Price Index, which tracks the most globally traded food commodities, averaged 131.2 points in Jan'23** against 132.2 for Dec'23 - the lowest since Sept 2021.

In separate cereal supply and demand estimates, **FAO raised its forecast for global cereal production in 2022 to 2.765 billion tonnes** from a previous estimate of 2.756 billion tonnes. **International wheat prices declined 2.5%** as production in Australia and Russia increased more than expected.

FAO is a UN specialised agency that leads international efforts to defeat hunger. It is one of the **UN food aid organisations based in Rome (Italy)**. Its sister bodies are the **World Food Programme** and the **International Fund for Agricultural Development (IFAD)**.



Read More - Food and Agriculture Organization's (FAO), World Food Price Index: FAO

Ukraine's Odesa in UNESCO's World Heritage List

Recently, the World Heritage Committee decided to **add the historic centre of Ukraine's Black Sea port city of Odesa to its list of World Heritage sites**. This decision recognizes the extraordinary **universal value of the site and the duty of all humanity to protect it**. The Historic Centre of Odesa **has also been inscribed on the List of World Heritage in Danger**.

The List of World Heritage in Danger is **designed to inform the international community of conditions that threaten the very characteristics for which a property was inscribed on the World Heritage List and to encourage corrective action**.

As of 2023, the **52 properties are decided by the Committee to include on the List of World Heritage in danger**.

Note:



Read More: [UNESCO's World Heritage Sites, Black Sea](#)

47th Raising Day of ICG

On the occasion of its 47th raising day celebration, Indian Coast Guard (ICG) announced its decision to install a new radar in the **Sunderbans** area for better patrolling and surveillance of the area while **taking guard against any terror activities from across the border**.

As the **fourth largest Coast Guard in the world**, it has played a significant role in securing the Indian coasts and **enforcing regulations in the maritime zones of India**.

In 1978 (establishment year), **there were just seven surface platforms**, now, ICG has **grown into a formidable force** with 158 ships and 78 aircraft in its inventory and **is likely to achieve targeted force levels of 200 surface platforms and 80 aircraft by 2025**.

In keeping with the **nation's vision of 'SAGAR' and 'Neighbourhood First' policy** the ICG has trained several foreign officers and personnel below officer ranks in 2022.

Read More: [Indian Coast Guard \(ICG\), Mission Sagar, Neighbourhood First Policy](#)

Visakhapatnam: Andhra Pradesh's Capital

Recently, the Chief Minister of Andhra Pradesh announced that Visakhapatnam would be the state's

new capital. The state needs a new capital since Hyderabad, the capital of undivided Andhra Pradesh, is now with Telangana, and **the two states have been sharing the capital temporarily**.

In 2020, the Andhra Pradesh Legislative Assembly **passed the Andhra Pradesh Decentralisation and Inclusive Development of All Regions Bill**. The Bill intends to give shape to the state government's plan of having **three capitals** — the **executive** capital in Visakhapatnam, the **legislative** in Amaravati and the **judicial** in Kurnool.

In 2022, the Andhra Pradesh **High Court** directed the State government to **construct and develop Amaravati, the capital city of the State**.

However, the issue awaits a final decision from the **Supreme Court** due to the petitions filed by the farmers who had given land to develop Amaravati.

Read More: [Andhra Pradesh Decentralisation and Inclusive Development of All Regions Bill, State government's plan of having three capitals, Three Capital Issue of Andhra Pradesh](#)

Armenia-Azerbaijan Conflict

Armenia appealed to the **International Court of Justice (ICJ) to order Azerbaijan to dissolve the road blockade isolating Nagorno-Karabakh**. Nagorno-Karabakh is within Azerbaijan but had been **under the control of ethnic Armenian forces since 1994** when a separatist war ended.

The **conflict can be traced back to the pre-Soviet era** when the region was at the meeting point of Ottoman, Russian and the Persian empires.

The self-declaration of independence by Nagorno-Karabakh in September 1991 in the backdrop of an imminent collapse of the Union of Soviet Socialist Republics (USSR) **resulted in a war between Azerbaijan and Nagorno-Karabakh** — supported by Armenia.



Note:

Read More: [International Court of Justice \(ICJ\), Nagorno-Karabakh Region, Armenia- Azerbaijan Conflict](#)

Khadi Fashion Show

Recently, a mega 'Khadi fashion show' was organised by the Khadi and Village Industries Commission (KVIC) in Rann of Kutch/ Kachchh. This mega event was the first such event of KVIC to establish new dimensions of the Khadi brand all over the world. The government of Gujarat holds a three-month long festival known as 'The Rann Utsav' every year.

The Rann of Kachchh is a salt marshy land in the Thar Desert in the kachchh district of western Gujarat. It lies between Gujarat in India and the Sindh province in Pakistan.

It is famous for its white salty desert sand and is reputed to be the largest salt desert in the world. The inhabitants of Kachchh are called Kachchhi and have a language of their own with the same name. Most of the population in Rann of Kachchh comprises of Hindus, Muslims, Jains and Sikhs.



Read More: [Rann of Kutch/Kachchh, Thar Desert, Khadi and Village Industries Commission \(KVIC\)](#)

WAN-IFRA

Recently, the Hindu Group has won four awards at the World Association of News Publishers (WAN-IFRA)

Digital Media South Asia Awards 2022 for its various products and services. This was the sixth edition of the digital media awards for South Asia.

WAN-IFRA is the global organisation of the world's press. Its mission is to protect the rights of journalists and publishers around the world to operate independent media. The goal is to provide members with expertise and services to innovate and prosper in a digital world and perform their crucial role in society.

Read More: [Freedom of Media](#)

IIMR in Hyderabad: Centre of Excellence (CoE)

Recently, during the presentation of the Union Budget 2023, Union Finance Minister announced that the Indian Institute of Millet Research (IIMR) in Hyderabad will act as a Centre of Excellence (CoE) for 'Shree Anna' to take the research on millets to the international level and make India a global hub for millets.

India is the world's largest producer and second largest exporter of several types of 'Shree Anna' (millets) with a share of 41% in 2020, as per the Food and Agricultural Organisation (FAO). Rajasthan, Karnataka, Maharashtra and Andhra Pradesh are leading producers.

As the year 2023 has been declared the 'International Year of Millet' by the United Nations General Assembly (UNGA). The IIMR is considered the main driver behind the surge in the interest and consumption of millet-based products in the country in the last 5-6 years.

Read More: [Centre of Excellence \(CoE\), Food and Agricultural Organisation \(FAO\), India's Millet Revolution, International Year of Millet](#)

Myanmar Extends Emergency Rule

Recently, Myanmar's junta announced the extension of the country's state of emergency by another six months.

'Coup' is generally described as a sudden, violent, and illegal seizure of power from a government.

In the November 2020 parliamentary election, Suu Kyi's party National League for Democracy (NLD) secured the majority of the seats.

Note:

In Myanmar's Parliament, **the military holds 25% of the total seats** according to the 2008 military-drafted constitution and several key ministerial positions are also reserved for military appointees. When the **newly elected Myanmar lawmakers were to hold the first session of Parliament in 2021, the military imposed a state of emergency for one year** citing massive voting fraud in the parliamentary elections.



Read More: [Military Coup in Myanmar](#)

Deep Ocean Mission

The **Union Budget 2023-24** has allocated **Rs 600 crore to the Deep Ocean Mission** to explore marine biodiversity for the sustainable use of resources.

Under this mission, a **manned submersible will be developed to carry three people to a depth of 6,000 metres** to facilitate mineral exploration in the central Indian ocean.

In 2016, **India was awarded a 15-year contract** to explore an area of 75,000 km² for mining polymetallic nodules from the **Central Indian Ocean Basin** at depths of 5,000-6,000 metres.

Read More - [Deep Ocean Mission, Samudrayaan Mission](#)

MISHTI Initiative for Mangroves

The **Union Budget 2023-24** announced a new initiative for mangrove plantations along the coastline and on salt

pan lands - **MISHTI (Mangrove Initiative for Shoreline Habitats & Tangible Incomes)**. Earlier, India joined the **Mangrove Alliance for Climate** launched during the **UNFCCC COP27**.

Although **Mangroves cover only about 0.1% of the planet's surface**, they can potentially **store up to 10x more carbon per hectare (ha)** than terrestrial forests. They protect coastal communities by acting as a **natural barrier against storm surges**.

According to **India State of Forest Report (ISFR) 2021**, India's total mangrove cover is 4,992 km² (**0.15% of total geographical area**). India **lost 40% of its mangrove cover** during the last century with **Kerala losing 95% of its mangroves** in the last 3 decades.

Read More - [Mangrove Forests, Mangrove Alliance for Climate](#)

Exercise Trishakti Prahar

The Indian military recently concluded **exercise Trishakti Prahar** — a joint training exercise in North Bengal (close to the strategic **'Siliguri' corridor**). The aim of the exercise was to **practise battle preparedness of the security forces**, using latest weapons and equipment in a networked, integrated environment, **involving the Army, the IAF and CAPFs**.

The exercise concluded with an **Integrated Fire Power Exercise** at the **Teesta Field Firing Ranges**, aimed at synergising the firepower assets of the Indian Armed Forces and CAPFs to orchestrate an integrated battle.

The Siliguri corridor or **Chicken's neck** (West Bengal) is a stretch of **land bordering Bangladesh, Bhutan and Nepal**, measuring approximately 170x60 km; **at the narrowest it is about 20-22 km**.



Note:



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